COTTON

APRIL SERVING THE 1940

Textile Industries

40 YEARS EXCLUSIVE BEARING EXPERIENCE

BEARINGS
BUSHINGS
BARBRONZE
BABBITT
Ledaloyl

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PERIODICAL DIVISION

ONE *dependable* SOURCE *for* ALL *your* BEARINGS

JOHNSON BRONZE

● Mill operators who appreciate quality depend entirely on Johnson Bronze for all their bearing requirements. They have found the long hours of smooth, satisfactory performance the true measure of economy.

Johnson offers you the most complete service available. UNIVERSAL Bar Bronze — completely machined—comes in 350 different sizes. General Purpose Bronze Bearings are available in over 800 sizes. Johnson Electric Motor Bearings service more than 250 different motors, and LEDALOYL—the ideal self-lubricating bearing—comes in over 300 stock sizes.

Every one of these items is instantly available from stock. Recognized distributors everywhere are ready to serve you — supported by a warehouse stock in Atlanta — 542 Spring Street.

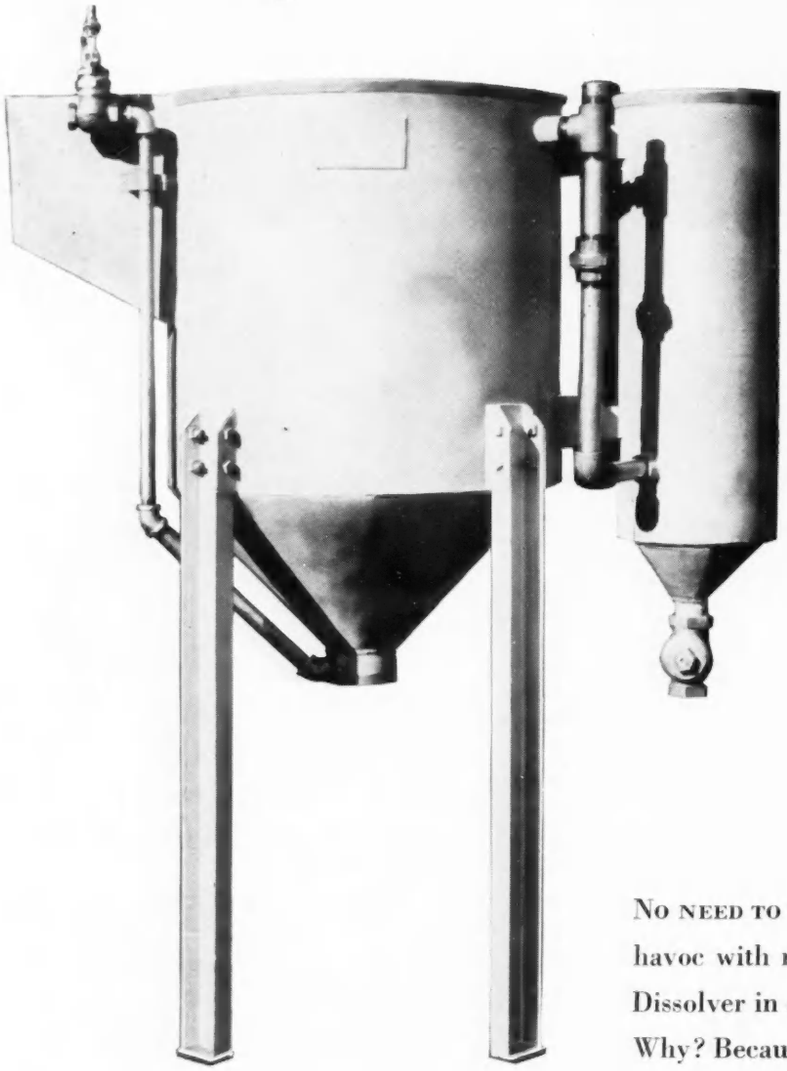
Write FOR YOUR FREE COPY

CATALOGUE 400 is now ready for you. Seventy-six pages filled with interesting and valuable bearing data — fully illustrated and free. Write for a copy — Today.

JOHNSON BRONZE COMPANY

530 SOUTH MILL STREET · · · NEW CASTLE, PA.

Built to produce PURE BRINE



Protecting the brine, and also resistant to its attack, the metal employed is Monel

One of a number of Salt Dissolvers fabricated for Myles Salt Co., Ltd., New Orleans, La., by Mecklenburg Iron Works, Inc., Charlotte, N. C.

MONEL

"Monel" is a registered trade-mark of The International Nickel Company, Inc., which is applied to a nickel alloy containing approximately two-thirds nickel and one-third copper.

NO NEED TO TELL a dyehouse man that brine works havoc with most metals. Yet the parts of this Salt Dissolver in contact with brine withstand its attack. Why? Because they're made of Monel.

Of the many corrosives used in the dyehouse, none is worse than salt. Many metals that resist other corrosives do *not* stand up against that. But Monel *does.* It withstands corrosion by salt *better than any other metal of comparable strength, toughness and wear resistance* . . . and so assures long, trouble-free service for dye jigs, tanks, linings, peroxide bleaching kiers and other dyehouse equipment.

Write for further information on this long-lived, economical alloy. Address:

THE INTERNATIONAL NICKEL COMPANY, INC.

67 WALL STREET, NEW YORK, N. Y.

COTTON is published monthly by W. R. C. Smith Publishing Company, Dalton and Atlanta, Ga., U. S. A.
Subscription Rates, United States and Possessions, $1.00 for one year; $2.00 for three years; Canada, $1.50 per year; Foreign Countries, $2.00 per year.
Entered as second-class matter at the Postoffice, Dalton, Ga., under the Act of March 3, 1879.

APR 17 1940

Mills Are Buying X Family High Speed Looms For Rayon

These Mills have bought XD Model Rayon Looms:

Ashland Corporation
Bloomsburg Silk Mills
Burlington Mills Corp.
- Blue Ridge Rayon Div.
- Cascade Rayon Div.
- Central Falls Div.
- Mid-State Cloth Mills

Carter Fabrics Inc.
Drayton Mills
Dunean Mills
Greenhalgh Mills
Hathaway Mfg. Co.
Hess Goldsmith Co.
Frank Ix & Sons Co.
Judson Mills
Keystone Silk Mills
Newmarket Mfg. Co.
Peerless Weaving Co.
Red Springs Weaving Mills
William Skinner & Sons
S. Slater & Sons Co.
Suncook Mills
Warwick Mills
Watts Mills

These Mills have bought XK Model Looms for Rayon:

Ashland Corporation
Associated Textiles of Canada, Ltd.
Burlington Mills Corp.
- Blue Ridge Rayon Div.
- Central Falls Div.
- Radford Weaving Div.
- Roanoke Weaving Div.

Cabot Mfg. Co.
Cadillac Silk Mills
Chadwick-Hoskins Co.
Dunean Mills
Gossett Mills
Greenhalgh Mills
Hathaway Mfg. Co.
Judson Mills
Keystone Silk Mills
Manville Jenckes Corp.
National Weaving Co.
Newmarket Mfg. Co.
Joseph M. P. Ott Mfg. Co.
Peerless Weaving Co.
Pepperel Mfg. Co.
William Skinner & Sons
S. Slater & Sons Co.
Stonecutter Mills
Strasburg Silk Mills
Suncook Mills
Syntex Fabrics, Inc.
Warwick Mills
Watts Mills
Wambec Mills, Inc.
Paul Whitin Mfg. Co.
- Northbridge Mill
- Kent County Mill

These Mills have bought XK Model Looms for Spun Rayon:

Seminole Mills
Springs Cotton Mills
- Eureka Plant

Victor Monaghan Co.
- Monaghan Plant

X Family Looms Sold

Up to March 1 1940

Model	Brought Out	Looms Sold
X	October 1930	37,244
XK	April 1935	12,796
XL	April 1935	2,959
XD	April 1939	4,165
Total		57,164

Draper Corporation
Atlanta Hopedale Spartanburg

American Textile Mills Are Modernizing

NEW! for Spindle Lubrication

•

A scientifically refined oil from selected crude. Designed to reduce power consumption over a long period, with freedom from gumming, fogging.

•

TEXACO SPINDURA OIL AA

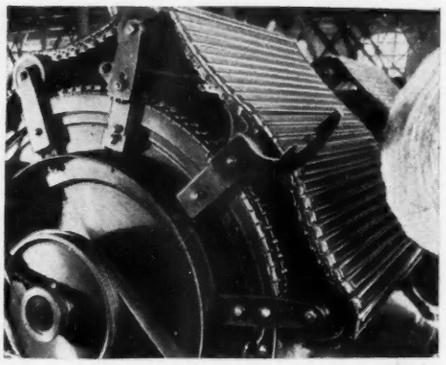
LUBRICATION FOR TEXTILE SPINDLES

Texaco Dealers invite you to tune in The Texaco Star Theatre—a full hour of all-star entertainment — Every Wednesday Night — Columbia Network — 9:00 E.S.T., 8:00 C.S.T., 7:00 M.S.T., 6:00 P.S.T.

RIGHT FOR BEARINGS!

FAFNIR
HYATT
NORMA-HOFFMANN
SKF

SPINNING FRAME . . . with Fafnir ball bearings.



CARD . . . using Norma-Hoffmann self-aligning roller bearings.

LOOMS . . . equipped with Hyatt wound-roller type bearings.

LOOMS . . . where SKF anti-friction bearings are in service.

FOR ANY MAKE of high-speed anti-friction bearings . . . in any type of mill equipment . . . *Texaco Starfak Grease* gives superior lubrication results.

Every day, textile men are proving this. All over the country, study of "before and after" performance reveals that with *Texaco Starfak Grease—starting and running torque is lower . . . power costs are lessened . . . staining of goods in process is practically eliminated . . .*

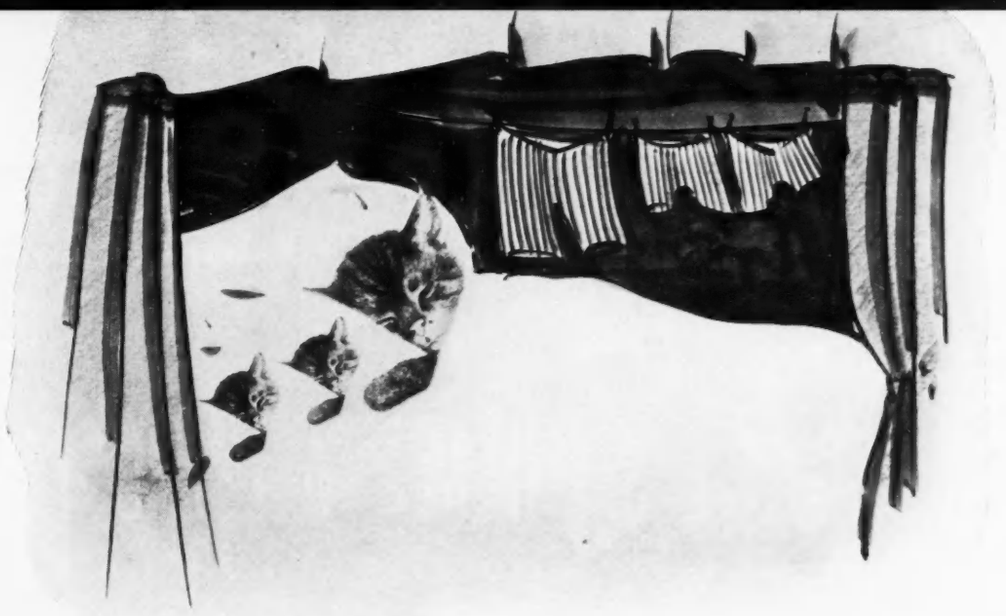
Large mills and small mills agree that these results add up to important savings. You, too, can make similar savings—maybe better ones—by changing over to *Texaco Starfak Grease* today. This lubricant is stable, resists oxidation and gum formation for long periods of service. It does not separate or leak out, but maintains its lubricating qualities under severest operating conditions . . . over wide ranges of temperature.

A Texaco Lubrication Engineer will be glad to work with your mill men, and demonstrate how *Texaco Starfak Grease* will help bring important savings. Just phone the nearest of more than 2300 warehouses, or write:

The Texas Company, 135 East 42nd St., New York, N. Y.

TEXACO

TEXACO STARFAK



FOR THE CAT'S PAJAMAS—*Warner Caustic Soda*

Pajamas come in handy for Chessie's famous "sleep like a kitten" act on the C.&O. So Chessie has taken on another job: Delivering Warner Caustic Soda from the gateway of the South at Charleston, West Virginia to a constantly increasing number of Southern textile plants.

Extracted from an unexcelled source—brines from ever flowing wells drilled deep into the sands of the Kanahwa Valley of West Virginia, Warner Caustic Soda is of uniformly high quality. With an iron content as low or lower than any caustic produced by any method, Warner Caustic Soda gives excellent results in textile processing yet commands no price premium.

If you have not yet investigated the double-barreled advantage of getting high-quality Warner Caustic Soda from this conveniently-nearby source, we invite your inquiry.

OTHER WARNER CHEMICALS

Carbon Tetrachloride, 99.995% Pure

Carbon Bisulfide	**Barium Oxide**	**Tetra Sodium Pyrophosphate**
Magnesium Oxides	**Barium Peroxide**	**Caustic Potash**
Blanc Fixe	**Bromine**	**Epsom Salt**
Barium Carbonate	**Chlorine**	**Hydrogen Peroxide**
Barium Hydrate	**Sodium Sulfide**	**Alumina Hydrate, Light**

CHEMICAL **WARNER** COMPANY

DIVISION OF

WESTVACO CHLORINE PRODUCTS CORPORATION

CHRYSLER BUILDING, NEW YORK, N. Y.

MAZLO
Reg. U.S. Pat. Off.

MAGNESIUM ALLOYS

THE LAST WORD IN LIGHTNESS

This bobbin has a fast life and a happy one

Old style bobbins of wood and fibre were light enough. But they were affected by high humidity and quickly got out of balance. Vibration of the spinning frames became so severe that spindles started causing trouble.

The new bobbins are all-metal, employing a central tube of MAZLO Magnesium extruded tubing. The weight is the same as before, or even less. They have strength to withstand the terrific centrifugal forces set up at high speeds. Most important, they're immune to humidity changes; perfectly balanced when new, *they stay that way.*

These bobbins now operate between 10,000 and 16,000 r.p.m., greatly increasing production of present equipment. Thus a tremendous investment in new plant equipment was avoided. Again, MAZLO Magnesium Alloys have helped a manufacturer make important savings. *Sales Agent:* Aluminum Company of America, 1704 Gulf Building, Pittsburgh, Pennsylvania.

MAZLO

AMERICAN MAGNESIUM CORPORATION

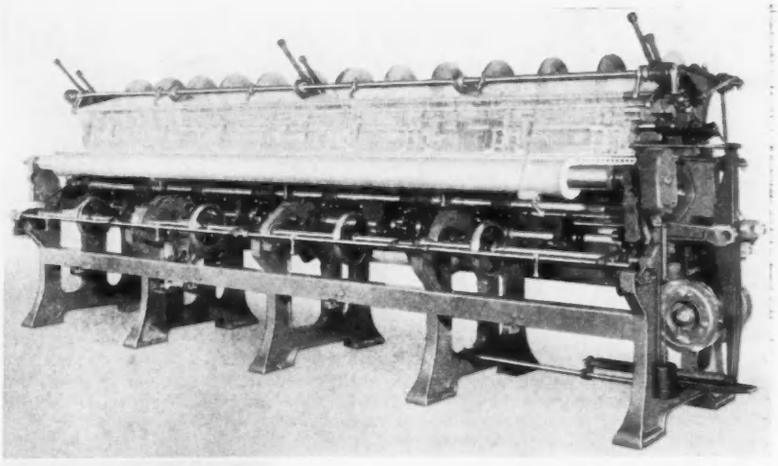
THE WHITIN
HIGH SPEED
WARP KNITTING MACHINE

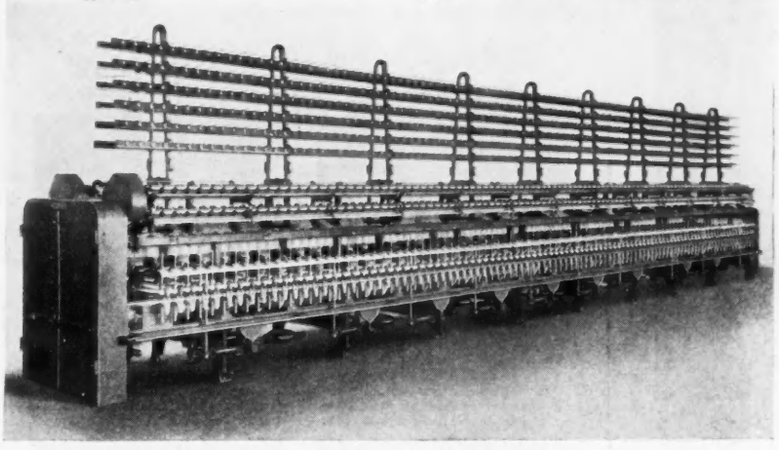
•

IMPROVED AND SIMPLIFIED

•

BUILT AND SERVICED
By an American Shop
For American Mills





THE WHITIN
HIGH PRODUCTION
NOVELTY TWISTER

•

FLEXIBLE AND EASILY ADJUSTED

•

FOR ALL TYPES OF NOVELTY YARNS

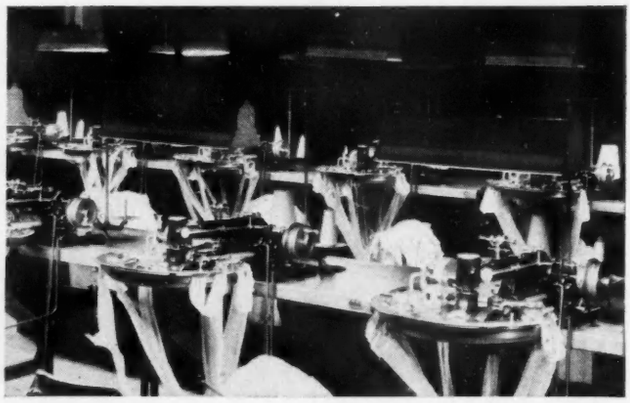
SEE THESE MACHINES IN CONTINUOUS OPERATION IN SPACES 118 to 123

WHITIN MACHINE WORKS
WHITINSVILLE, MASSACHUSETTS, U. S. A.
CHARLOTTE, N. C. ATLANTA, GA.
SELLING AGENTS, Jacquard Knitting Machine Co., Inc., Philadelphia.

HOW THEY GOT A LILY OUT OF BED IN TIME FOR EASTER

1 IF EASTER LILIES BLOOM TOO LATE, florists lose heavily. To the rescue come scientists, who show how blooming can be advanced two weeks with electric light. At Ohio State University, lily at left was kept at 60° F with no added light. Lily at right was given same heat plus four hours extra light daily.

2 SCIENTISTS USED standard 150 watt G-E MAZDA lamps in this test. Similar experiments have employed sodium vapor and mercury arc lamps. General Electric research is constantly finding new ways to improve existing lamps, as well as developing new lamps to meet specific problems.



3 THIS TRYON, N. C. MILL gets 100 footcandles of light on the points of its loopers by using G-E MAZDA Daylight Fluorescent lamps in 24″ units mounted above each machine. Can you use these lamps in your mills? Ask your G-E lamp man or your local electric service company.

4 THIS GIANT "ELECTRIC EYE" measures light output of G-E bulbs... one of 480 tests and inspections. Sixty years of G-E research and development have increased lamp efficiency as much as 1000%, reduced prices as much as 85%. Today's 100 watt 15c lamp is almost 50% brighter than the same size you paid $1.10 for in 1921. To get more and more light for your money, year after year, be sure to buy G-E MAZDA lamps.

G-E MAZDA LAMPS

GENERAL ELECTRIC

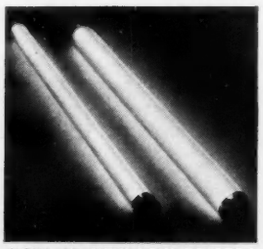
Year by year, better lamps for every purpose

G. E. MAKES 9000 DIFFERENT LAMPS...

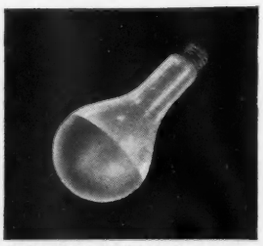
How many can help your business?

LIGHT WHERE YOU NEED IT with G-E MAZDA Projector lamp. Lens, filament and reflector in one all-glass unit. The 150 watt size is now only $1.40.

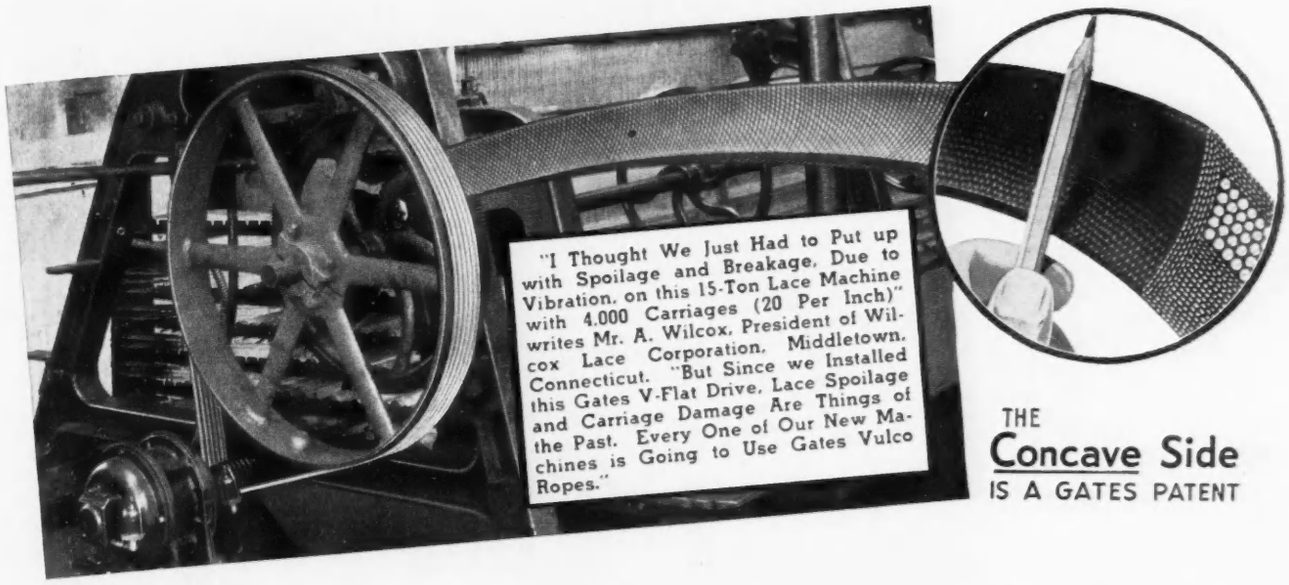
INCREASED DEMAND for more light has sold more larger size bulbs, like this 300 watt inside frost G-E MAZDA lamp. It sells for only 55c.



NOW AT NEW LOW PRICES! G-E MAZDA "F" (fluorescent) lamps provide higher levels of lighting, are comfortably cool. 15 watt daylight type, $1.15.

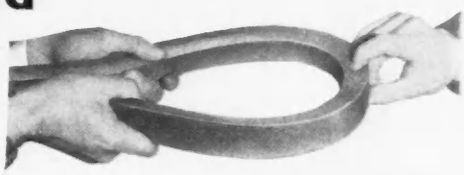


INDIRECT LIGHT at low cost with G-E Silvered Bowl MAZDA lamps. A coating of mirror silver is sealed on bowl. The 150 watt size costs only 55c.


"I Thought We Just Had to Put up with Spoilage and Breakage, Due to Vibration, on this 15-Ton Lace Machine with 4,000 Carriages (20 Per Inch)" writes Mr. A. Wilcox, President of Wilcox Lace Corporation, Middletown, Connecticut. "But Since we Installed this Gates V-Flat Drive, Lace Spoilage and Carriage Damage Are Things of the Past. Every One of Our New Machines is Going to Use Gates Vulco Ropes."
THE
Concave Side
IS A GATES PATENT

Here's a Simple Fact

Prove it for Yourself and SAVE MONEY *on* V-BELTS *and* POWER



Pick up any V-belt having the ordinary straight sides and bend the belt. Three things will happen, right before your eyes.

(1) The top of the belt is under tension and grows narrower. (2) The bottom is under compression and becomes wider. (3) The sides of the belt bulge out. (Figure 1, at right).

This bulging of the straight sided V-belt in its sheave-groove costs you money in two ways—(1) The bulge causes uneven sidewall wear—shorter life! (2) The bulging side cannot evenly grip the sheavewall—a loss in transmission efficiency!

V-Belt in Sheave

It's the *sides* of a V-Belt that do all the *gripping* and get all the *wear*. That's why longer life for the *sides* means *longer life for the belt.*

In figure 2, you see how the precisely engineered concave side of the Gates Vulco Rope exactly corrects this bulging. Two distinct savings result. (1) The Gates Vulco Rope wears evenly—longer life! (2) The entire sidewall grips the pulley—carries heavier loads without slippage: saves the belts and also saves your power!

The Gates Vulco Rope is the only V-belt built with the patented concave side.

What Happens When a V-Belt Bends

FIG. 1

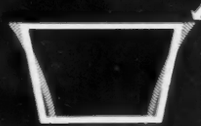


FIG. 2

THE GATES RUBBER COMPANY

Engineering Offices and Stocks in All Large Industrial Centers

GATES VULCO ROPE DRIVES

CHICAGO, ILL., 1524 South Western Ave. HOBOKEN, N. J., Terminal Building BIRMINGHAM, ALA., 1631 1st Ave., S. LOS ANGELES, CAL., 741 Warehouse St.

DENVER, COLO., 999 South Broadway DALLAS, TEX., 2213 Griffin Street PORTLAND, ORE., 333 N. W. 5th Ave. SAN FRANCISCO, CAL., 2700 16th St.

Pontamine* Diazo Colors

Pontamine Diazo Yellow 4G (Patented)
Pontamine Diazo Yellow 2GL (Patented)
Pontamine Diazo Yellow GM (Patented)

Pontamine Diazo Orange
Pontamine Diazo Orange G (Patented)
Pontamine Diazo Orange 3G (Patented)
Pontamine Diazo Orange GR (Patented)
Pontamine Diazo Orange R
Pontamine Diazo Orange RFW
Pontamine Diazo Orange 2R (Patented)
Pontamine Diazo Orange WD (Patented)

Pontamine Diazo Brown 6G
Pontamine Diazo Brown R (Patented)

Pontamine Diazo Bordeaux 7B
Pontamine Diazo Bordeaux 2BL
Pontamine Diazo Bordeaux RB
Pontamine Diazo Red 5BL
Pontamine Diazo Red 7BL
Pontamine Diazo Red BFW
Pontamine Diazo Scarlet A
Pontamine Diazo Scarlet 2BL
Pontamine Diazo Scarlet FW
Pontamine Diazo Scarlet GFW
Pontamine Diazo Scarlet R

Pontamine Diazo Violet BL (Patented)
Pontamine Diazo Violet RR (Patented)

Pontamine Diazo Blue BR
Pontamine Diazo Blue BRW
Pontamine Diazo Blue 3G (Patented)
Pontamine Diazo Blue 6G
Pontamine Diazo Blue 5GL
Pontamine Diazo Blue NA
Pontamine Diazo Blue 6RN

Pontamine Diazo Green BL (Patented)
Pontamine Diazo Green 3G
Pontamine Diazo Green 2GL
Pontamine Diazo Green GW (Patented)

Pontamine Diazo Black BHSW Conc.
Pontamine Diazo Black OB
Pontamine Diazo Black RS
Pontamine Diazo Black ZV Conc.

Du Pont Primuline
Du Pont Primuline Concentrated

The discovery in 1887 that an attractive red could be obtained by diazotizing Primuline dyed on cotton, then developing with beta naphthol, established an important new general method of producing dyeings having superior wash fastness.

Today, developed colors, because of their very good discharge properties and fastness to washing, are used widely in ground shades for discharge printing of cotton, viscose process rayon and pure silk.

In 1922, Du Pont began the manufacture of developed colors. From its laboratories and plants has emerged the present line of 43 products, ranging from a brilliant greenish yellow to a full, bloomy black—each fulfilling a specific need.

The production of Pontamine Diazo Colors requires unusual care. Products of uniform quality, working properties and dischargeability are essential in meeting exacting standards. Modern manufacturing facilities plus skilled technical supervision and checking of each raw material and operating step by control laboratories are combined to achieve these results.

*Reg. U. S. Pat. Off.

DU PONT DYESTUFFS

E. I. du Pont de Nemours & Co. (Inc.)
Organic Chemicals Department
Dyestuffs Division
Wilmington, Delaware, U. S. A.

More Production

. . . and better production, too, is the result when your frames are equipped with Pawtucket Rings. To give your travelers a "turn for the better" install these better rings . . . now.

PAWTUCKET SPINNING RING CO.

(Subsidiary of Saco-Lowell Shops) CENTRAL FALLS, R. I.

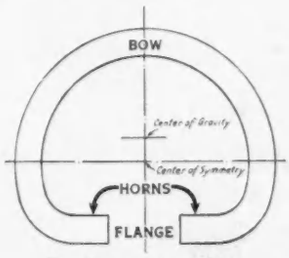
Vitritex finish

CUT OUT AND KEEP THIS INFORMATION FOR PERMANENT REFERENCE

This is number 2 of a series. Here you will find practical information of interest to users of rings

Spinning rings can be furnished in a wide range of diameters and flange sizes. The two most common flange sizes are No. 1 flange, .125-inch, and No. 2 flange, .156-inch. There is no hard and fast rule to determine the selection of the proper ring flange. It is possible to do equally well with any size flange within reason.

The advantage of the No. 1 flange over the No. 2 flange, if any, is in the use of a traveler which is heavier in section and has a probability of longer life. The traveler in the case of the No. 1 flange is thicker and somewhat narrower, and is thus less likely to damage the ring, as it will not present such a sharp edge to the flange after traveler wear has set in. The selection of the proper flange depends entirely on the preference and judgment of the spinner. What may be satisfactory in one mill may be exactly to the contrary in another.



The Parts of the Traveler

SIZES OF RING FLANGES

Flange	*Width*	*Outside diameter of ring would be*
No. 0	$\frac{3}{32}$"	$\frac{3}{16}$" larger than hole
No. 1	$\frac{1}{8}$"	$\frac{1}{4}$" " " "
No. 2	$\frac{5}{32}$"	$\frac{5}{16}$" " " "
No. 2½	$\frac{11}{64}$"	$\frac{11}{32}$" " " "
No. 3	$\frac{3}{16}$"	$\frac{3}{8}$" " " "
No. 4	$\frac{7}{32}$"	$\frac{7}{16}$" " " "
No. 5	$\frac{1}{4}$"	$\frac{1}{2}$" " " "
No. 6	$\frac{9}{32}$"	$\frac{9}{16}$" " " "
No. 7	$\frac{5}{16}$"	$\frac{5}{8}$" " " "
No. 8	$\frac{11}{32}$"	$\frac{11}{16}$" " " "
No. 9	$\frac{3}{8}$"	$\frac{3}{4}$" " " "

Saco-Lowell Shops, Boston, Mass.

$12,000 CAME WALKING IN THE DOOR

AN ACTUAL EXPERIENCE OF ONE PLANT THAT CALLED IN A C.P.P. TECHNICAL MAN

"A Colgate-Palmolive-Peet man visited our plant and made a careful survey of our rayon processing formula. He said he thought it possible to reduce processing costs.

"On his advice, we ordered 25 barrels of his product for a trial run. We felt this quantity would provide a fair test of his suggestions in processing our rayon fabrics.

"We processed some 750,000 yards of goods with the new C.P.P. formula—and found soap costs were down 30% to 35%. This is an actual yearly saving of about $12,000.00."

C. P. P.'S FREE CONSULTING SERVICE MAY BE ABLE TO SAVE YOU MONEY! ASK YOUR C. P. P. MAN TODAY!

This is an actual case history. It is just another example of how quality soaps plus proper application can reduce costs.

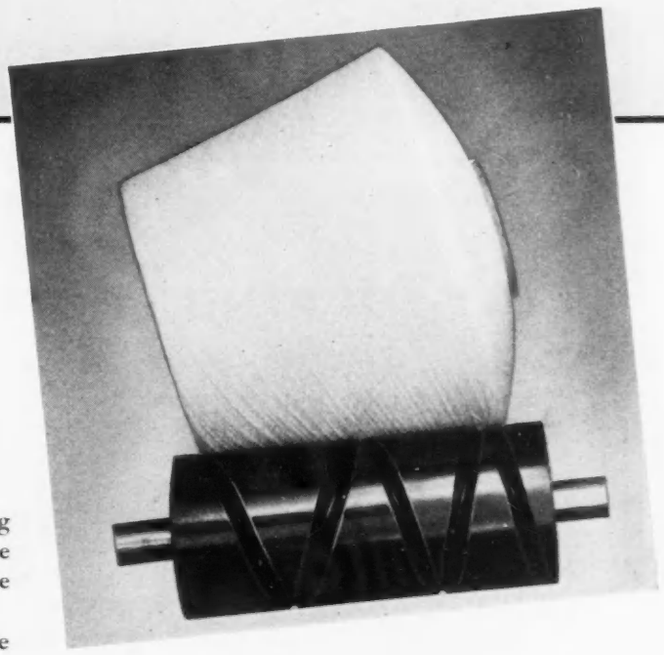
No matter what your processing requirements may be, in the complete line of C. P. P. products you'll find washing and wetting agents to exactly fit your own special needs.

C.P.P. processing agents in most cases cost less to use than many so-called "special" products because of the volume in which they are produced. Ask your C.P.P. man for full information. Or write direct to us—no obligation, of course.

COLGATE-PALMOLIVE-PEET CO.

INDUSTRIAL DEPT., JERSEY CITY, N.J.

"....ONE OF THE MOST SIGNIFICANT IMPROVEMENTS IN TEXTILE MACHINERY IN 50 YEARS...."



Mr. Franklin A. Reece is named a "MODERN PIONEER" by National Association of Manufacturers for his invention of the "rotating traverse." The citation on Mr. Reece's award reads: "For the development of the Reece Roll, in textile machinery, which made possible the production of a winding machine with no reciprocating parts; one of the most significant improvements in textile machinery in the past 50 years."

The "rotating traverse" is the one-piece driving drum and traverse guide which is the "heart" of the Roto-Coner*, the drum winder which has found wide acceptance among manufacturers of cotton yarn.

Here are a few of the advantages resulting from the rotating traverse, considered by the National Association of Manufacturers as a "distinguished achievement in the field of science and invention which has advanced the American standard of living."

LOWER WINDING COSTS

Higher winding speeds, through the elimination of reciprocating parts, greatly increase production. Rewinding of cones is reduced to a minimum. The simplified design involves fewer parts, so there is a very low maintenance cost. No special lubricating is required, so cost of supervision is low. Cleaning can be done quickly due to the streamlined design of the winder. Interruptions for greasing, cleaning or repairs are fewer, which means increased production.

IMPROVED YARN QUALITY

The chief cause of roll-cut yarn is eliminated because the rotating traverse is made in one piece. Yarn is not chafed as it is with reciprocating-guide winders, because the drum revolves in the same direction the yarn travels. Hard ends on the package are eliminated because the yarn is quickly reversed at the ends of the traverse.

Bulletin 144 describes the Roto-Coner* in more complete detail. For a free copy, write P. O. Box 1605, Providence, Rhode Island

ROTO-CONER LEESONA *TRADEMARK

THE ROTATING TRAVERSE WINDER

UNIVERSAL WINDING COMPANY P.O. BOX 1605 **PROVIDENCE, R. I.**

BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

Fig. 1645
Pat's. Pend.

Dependable!

UNBRAKO

SELF-LOCKING HOLLOW SET SCREWS

Set screws may play a comparatively small part in the successful operation of your equipment as a whole, yet their job is mighty important. And when ordinary set screws work loose under vibration, as they frequently do, the resulting lost time, trouble and breakdowns add up to a lot of unnecessary expense.

Unnecessary because, by equipping with "Unbrako" Self-Locking Hollow Set Screws, you automatically forestall such trouble. "Unbrako" Self-Lockers are dependable. Once set up they lock into place with a grip vibration cannot loosen.

Ingenious knurling around the cup points offers no resistance when setting up, but absolutely prevents accidental unwinding. Operations are made with the ordinary hex bar wrench and screws can be re-used indefinitely. Play safe—specify "Unbrako".

Fig. 1641
Pat's. Pend.

Fig. 1646
Pats.
Pend.

UNBRAKO **SQUARE HEAD SELF-LOCKING SET SCREWS**

also have the same dependable protective features described above. This combined with the well-known high strength and accuracy of "Unbrako" Products, make them your best buy. Send for samples and literature for these too.

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA.

BOX 582

BRANCHES
BOSTON
DETROIT
INDIANAPOLIS

BRANCHES
CHICAGO
ST. LOUIS
SAN FRANCISCO

THE DRAYTON MILLS USE Caro-Gant

REG. U.S. PAT. OFF.

A HARTEX PRODUCT

View of Weave Shed

ARRANGE FOR A DEMONSTRATION

● Let our demonstrator prove, in YOUR plant, the benefits resulting from the use of CARO-GANT. He doesn't merely bring a container of CARO-GANT—he studies your mill conditions and familiarizes himself with your individual slashing and weaving problems. An inquiry entails no obligations.

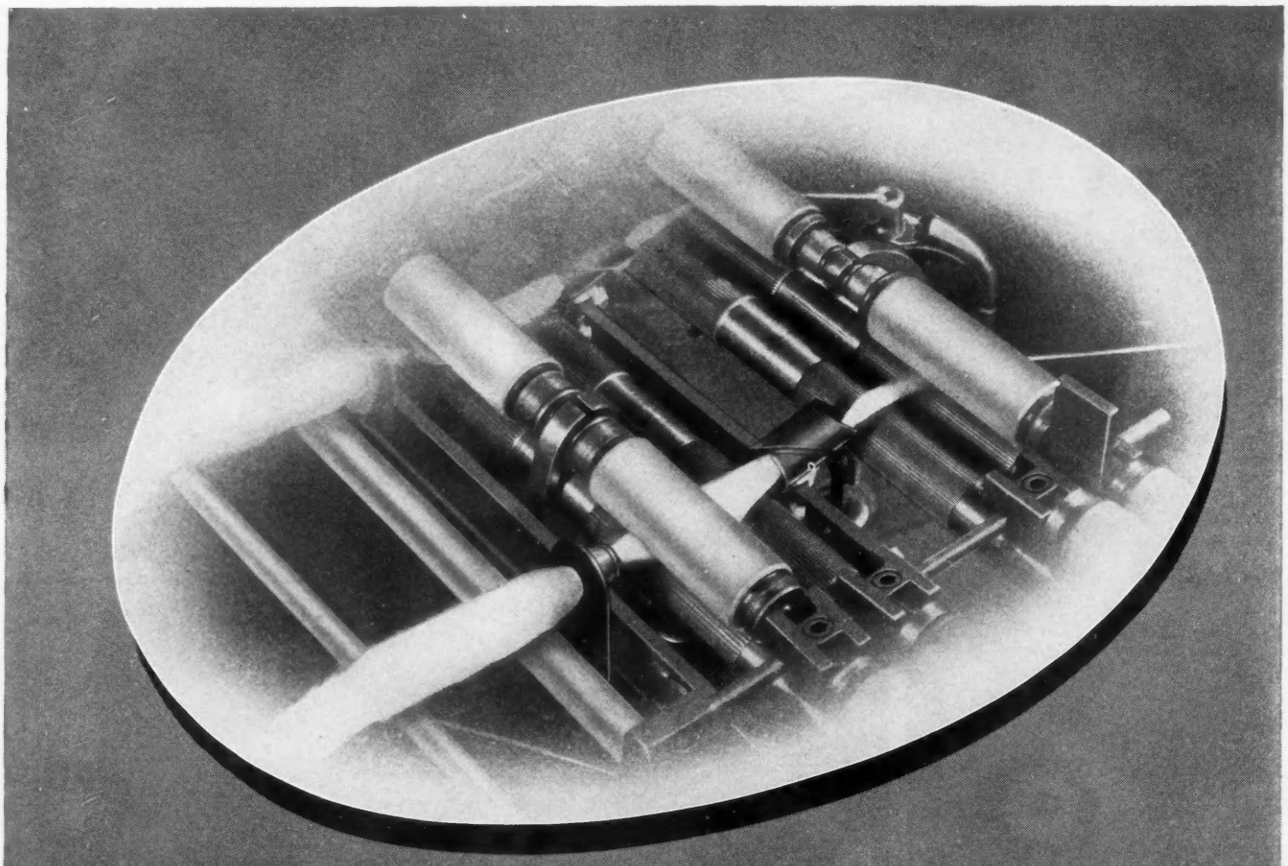
● THE DRAYTON MILLS of Spartanburg, S. C., manufacturing a variety of fancies and broadcloths, is one of the outstanding fine goods mills of the South. For many years it has used Caro-Gant, the "ORIGINAL 100% ACTIVE" Warp Dressing. Like many other progressive mills, they have found that Caro-Gant gives consistently satisfactory results, ensures high weaving efficiency and minimum shedding. It contains no inert ingredients, is perfectly balanced, and works satisfactorily on any kind of weave . . . from coarse to very fine. Caro-Gant is economical too, for one barrel will do the work of three barrels of ordinary sizing.

THE HART PRODUCTS CORPORATION

MANUFACTURING CHEMISTS

1440 BROADWAY • NEW YORK, N. Y.

HART PRODUCTS BASED ON RESEARCH



H & B HIGH DRAFT ROVING SYSTEM

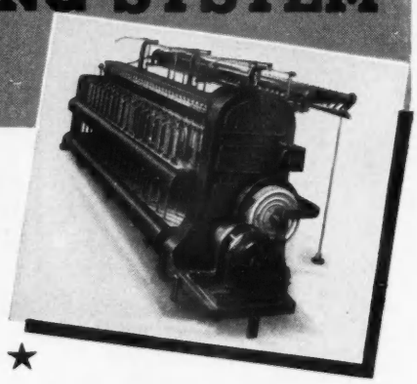
WHY IT HAS SET NEW STANDARDS OF EFFICIENCY

THIS system, introduced approximately 3 years ago, has been so successful that it has established new standards of efficiency in high-draft roving machinery.

Its success is principally due to the Patented Scroll Condenser illustrated herewith. This simple device, made of Bakelite to eliminate static, has for its object not only the guiding of the roving between the two drafting zones, but the much more important function of controlling and folding-in the flank fibres, which otherwise become detached from the main ribbon of cotton. The folding-in process of this system, unlike that of any other arrangement, gives to the sliver a half turn of twist, thereby retaining complete control of all fibres during the drafting process. The advantage of such preparation, previous to the final drafting zone, is one of the most important factors contributing to the regularity and strength of the final yarn.

With the aid of this Condenser, the H & B High-Draft Roving System will draft drawing frame sliver up to 35 to produce up to 6 hank roving in one operation. To produce finer roving this system's product goes to jacks or fly frames of the conventional type.

The system is so simple and fundamentally efficient that it is readily adaptable to ANY recognized make of frame, new or old. The results obtained on numerous installations of competing frames very strikingly present the benefits which can be obtained by converting existing machines



★

to the H & B Scroll Condenser arrangement of High Draft.

Let us estimate what savings can be made in your mill.

H&B AMERICAN MACHINE COMPANY

Textile Mill Machinery

PLANT AT PAWTUCKET, RHODE ISLAND

BOSTON OFFICE: 161 Devonshire St.; ATLANTA OFFICE: 815 Citizens & Southern National Bank Bldg.
CHARLOTTE OFFICE: 1201-3 Johnston Bldg.
EXPORT DEPARTMENT: United States Machinery Co. 115 Broad St., New York, N. Y.

★ Our new High-Draft Roving Frame with 12 Major Improvements which will be explained on request.

FORWARD WITH TUBIZE

as Tubize moves

FORWARD WITH FASHION

TUBIZE TODAY is moving forward at ever-increasing speed ★ ★ ★ into an ever-widening orbit of service. New Tubize Yarns, new Tubize Fabrics, are providing weavers and knitters, designers and apparel makers, wholesalers and retailers alike with *new opportunities, new ideas for sought-after merchandise and expanded sales* ★ ★ ★ and are giving the consumer *greater utility, fashion-right beauty, dependable quality.*

FABRIC WEARING QUALITIES CHECK TESTED ☆ APPROVED BY AN INDEPENDENT TESTING LABORATORY ☆

TUBIZE *tested quality* **RAYON**

The Tubize merchandise slogan, "*Sell the Seal and Seal the Sale*" is achieving an ever-increasing significance. Aggressive consumer advertising vitalized by the unique buying confidence built by institutions such as Good Housekeeping, Woman's Home Companion, Jean Abbey radio programs, and big-name promotions of retail stores, have won for the Tubize Certified Quality Seals the interest, faith, and actual purchasing support of millions of American women. For details you are invited to write to

TUBIZE CHATILLON CORPORATION

TWO PARK AVENUE · NEW YORK CITY

Viscose and Acetate Rayon Yarns and Fabrics

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N. Y.

Telephone: AShland 4-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

●

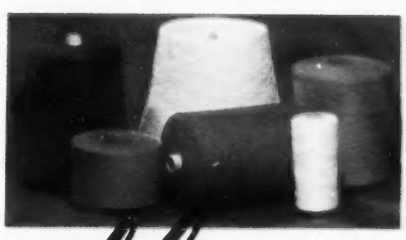
ESTABLISHED 1840

franklin process service

IT SIMPLIFIES THE PRODUCTION OF YARN DYED DRESS GOODS

EFFICIENT production of yarn dyed dress goods requires a wide range of suitable shades for styling, large dye batches to avoid shade variations in solid color areas and prompt deliveries to permit timely selling. Franklin Process Service fulfills all of these requirements.

Our new dress goods color card contains many shades specially developed for the purpose, — not only for eye appeal but also for good all around fastness. We can dye up to 2500 lbs. of yarn in a single batch and have hundreds of dyeing machines in 22 different sizes and adequate winding equipment for prompt and efficient service.



Whether your product is dress goods or any other textile fabric requiring colored yarns (cotton, spun rayon or worsted), the unequalled facilities and experience of Franklin Process can probably help you.

FRANKLIN PROCESS *Natural Yarns, Colored Yarns, Glazed Yarns, Custom Dyeing.* Providence, Philadelphia, Greenville, Chattanooga • New York Representative, 40 Worth St. • Chicago Representative, 100 W. Monroe St.

WE ALSO DYE YARNS FOR
chenille fabrics • shirts • pajamas • underwear • handkerchiefs • curtains • draperies upholstery fabrics • terry cloth • narrow fabrics • braids • elastic fabrics • wire covering • hosiery • knit goods

franklin process

★ LARGEST PACKAGE DYERS IN THE WORLD

VALUE
comes out in the
Finish
As the skill of the diamond cutter determines the value of the gem, so does the skill of the dyer and finisher determine the value of hosiery. ★ But expert finishers don't depend on skill alone; they pick their processing materials carefully. Many demand . . . .
Arko-Finishes
HOSIERY of any style benefits in finish, wearing quality and all-around consumer appeal when treated with
Arko-Finishes
*DELUSTROL #960
*HOSIERY FINISH #958
*AQUAROL H
*Reg. U. S. Pat. Off.
ARKANSAS CO., INC. • NEWARK • NEW JERSEY

Basically different Principle means...

LESS WEAR
LESS MAINTENANCE
LONGER LIFE

The Westinghouse Hermetically-sealed Unit
...the HEART of every "TEMPERED COLD" WATER COOLER

...reduces maintenance costs by eliminating (1) Belts (2) Pulleys (3) Gaskets (4) Shaft Seals (5) Commutator Brushes.

Fewer parts to wear. Even these parts operate in a permanent supply of oil. No oiling necessary. Built-in Watchman prevents costly motor burnouts. All this means EXTRA years of trouble-free performance.

TRIM MAINTENANCE COSTS

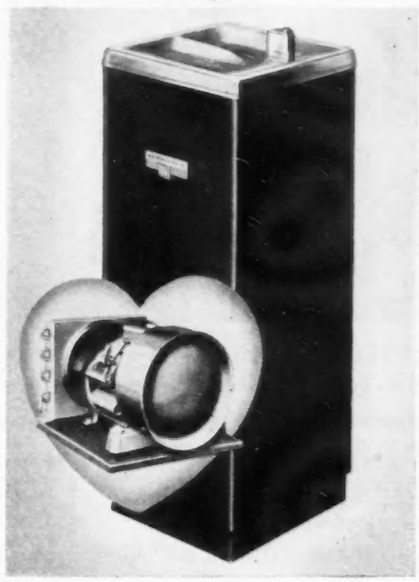
...with the PERMANENT COST CONTROL PLAN

Only Westinghouse offers this 3-point protection on a complete line of water coolers:

1. Standard one-year free replacement warranty on unit and cabinet.
2. During the next four years, if the Hermetically-sealed Unit should fail, Westinghouse replaces it without charge—and pays all transportation and labor costs.
3. After 5 years, if and when the Hermetically-sealed Unit should fail, Westinghouse will replace it on an equitable exchange basis. The exchange unit carries four years' replacement protection with all the features of the second part of the plan.

Exclusive "PLUS VALUE" Features

Non-Clog Drain • Stainless Steel Top • Special Capacity Booster • High Efficiency Cooling Chamber • Built-in Watchman • Hermetically-sealed Unit.



Westinghouse "Tempered Cold" WATER COOLERS
"Build Friendly Relations"

Westinghouse Section 80, 653 Page Blvd., Springfield, Massachusetts

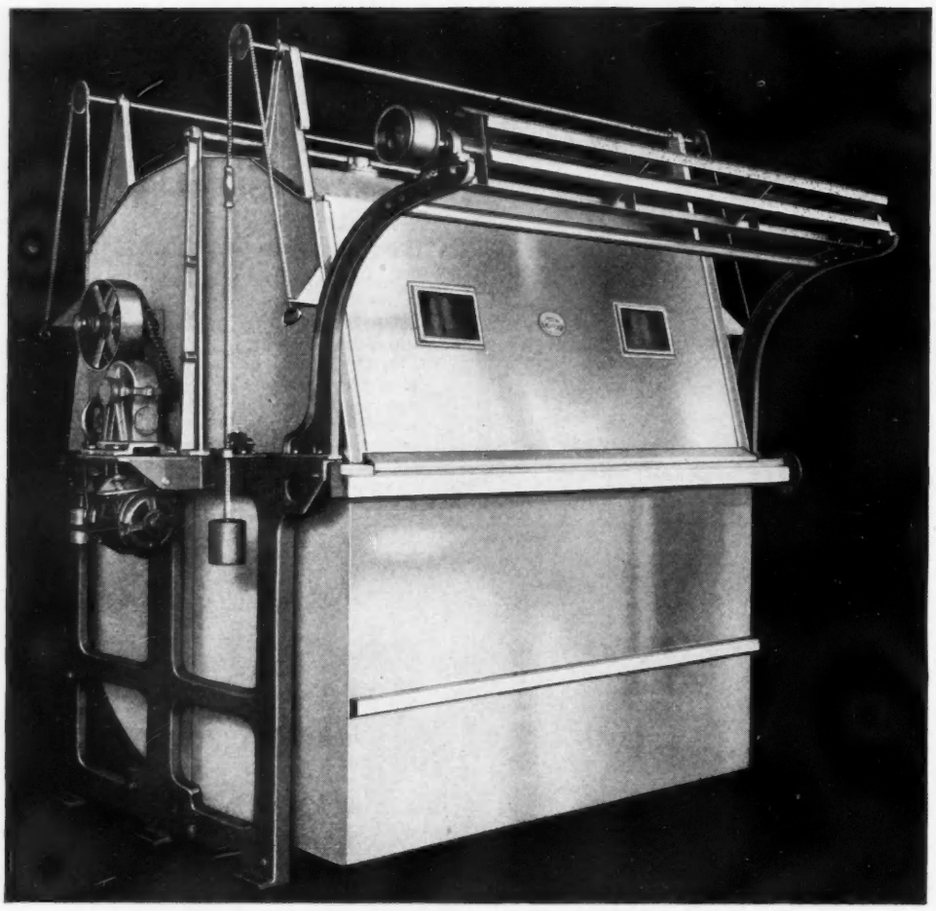
Please send complete details on Westinghouse "Tempered Cold" Water Coolers and the Permanent Cost Control Plan.

Name.....

Address.....

City.....State.....

THE NEWEST AID TO BETTER PIECE DYEING AND BLEACHING



JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS MASS.

In keeping with the most exacting modern demands for better piece dyeing and bleaching equipment, Hunter offers its new Model NK Stainless Steel Piece Dyeing and Bleaching Kettle.

As modern as 1940, the new Stainless Model NK offers the user these distinct advantages among others:

(1) Completely vibrationless construction—all driving and driven members supported in newly designed separate frames.

(2) Vari-speed drive for main reel for greater flexibility.

(3) A size and type for any piece dyeing or bleaching requirement.

(4) Tight top enclosure which is windowed and lighted . . . saves up to 35% of steam for the dyeing cycle.

(5) Proved performance on fabrics ranging from mohair plushes, tapestries, woolens, worsteds, unions, blankets, to rayon suitings.

If you contemplate replacing or expanding your present dye house units, it will pay you to ask Hunter for details. Write or call.

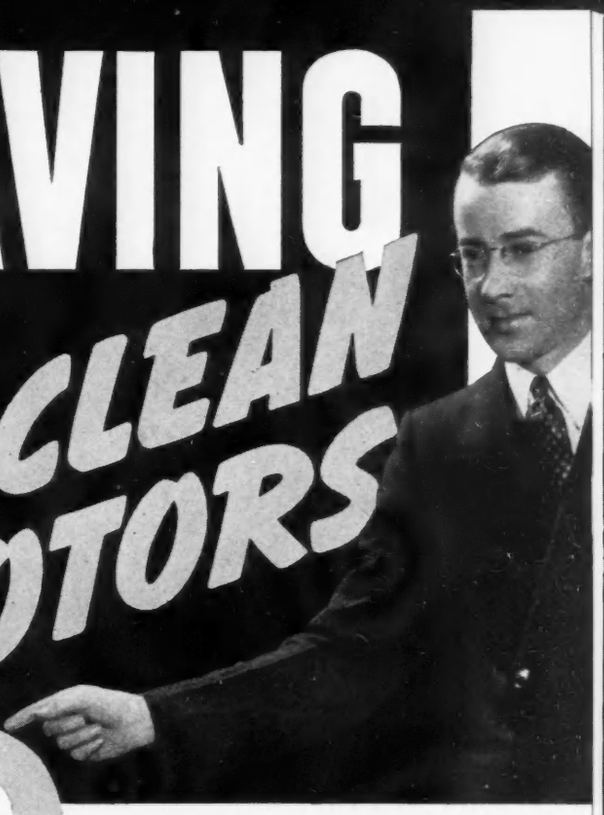
Founded 1874

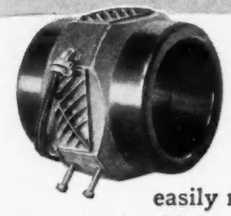
North Adams, Mass.

JAMES HUNTER MACHINE COMPANY

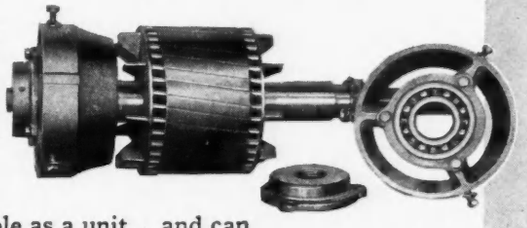
Southern Agent: **CAROLINA SPECIALTY CO., Charlotte, N. C.**
Western Representative: **E. G. PAULES, 343 Bendix Bldg., 1206 Maple St., Los Angeles, Cal.**

MONEY SAVING FACTS ON QUICK-CLEAN MOTORS





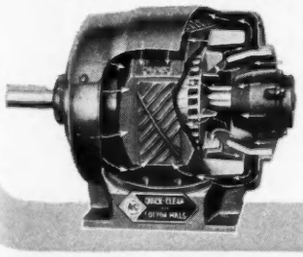
NO LINT OR FLY CAN ADHERE to the Quick-Clean's smooth, hard stator surfaces — a big factor in making these motors lint-proof and fly-proof. All working parts are dust-sealed. The stator, rigidly supported on the motor base, is easily removable . . . interchangeable. Note how coils are completely shielded — another important Quick-Clean feature.



INDESTRUCTIBLE ROTOR is mounted on ball bearings in sealed cartridge units that keep oil in . . . keep dust out. The Quick-Clean Rotor is silver brazed . . . and is rigidly supported on the base. Like the stator, the rotor is also removable as a unit...and can be interchanged readily. These rotor features combine to give long life . . . lowest possible maintenance.

RIGID FOUNDATION for Stator and Rotor is provided by the one-piece steel base and bearing support. Points of support for stator and rotor are accurately machined at one setting, insuring uniform air gaps. Extra protection is given the stator by an easily removable cover plate.

HERE'S THE QUICK-CLEAN PRINCIPLE! Dust-laden air drawn into motor is ejected at sides. Air passages are large and unobstructed . . . and all inside surfaces are glass-smooth, making it impossible for lint or dust to adhere. In Quick-Clean Motors you get full-measure construction throughout . . . extra-value performance that's bound to save you money!



A 1212

Allis-Chalmers Quick-Clean Motors are Tailor-Made to Beat Textile Motor Problems! Get the Facts . . . Today!

In the textile industry, motors face conditions that are different from all other industries . . . conditions that stop ordinary motors . . .

That's why textile production men everywhere are SWITCHING to Allis-Chalmers Quick-Clean Motors! For here are motors that are designed from the ground up for one purpose only — ***to help textile men beat the lint problem . . . prevent shutdowns . . . stop power leaks!***

And what a job they do! Thousands of Quick-Clean Motors are already in operation in hundreds of modern mills all over the country . . . setting new standards of dependable, low-cost motor performance for textile mills!

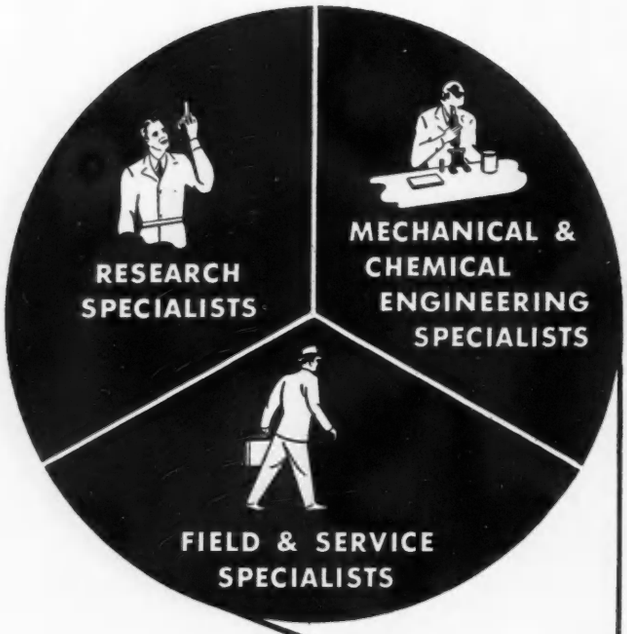
If you want to find out how to beat the most severe lint and dust conditions . . . do a better job of driving spinning frames and other mill machinery . . . and at the same time actually make important savings in power costs — get the Quick-Clean story . . . and get it today!

There's a trained engineer in the district office near you. Call him in . . . let him show you how Quick-Clean Motors can save money for you. Or write direct to Allis-Chalmers, Milwaukee, for complete facts.

Over 90 Years of Engineering Superiority Work for You When You Specify Allis-Chalmers!

ALLIS-CHALMERS

MILWAUKEE · WISCONSIN



You get

MAN POWER

with Du Pont

CUSTOM BLEACHING SERVICE

FROM the front lines—right in the bleach house—back to the supporting specialists—engineers and chemists—is a constant flow of problems to be solved—new ideas to be tried.

Du Pont's Custom Bleaching Service comprises the products—Peroxides for every bleaching purpose; and a corps of progressive thinking men—specialists—whose job it is to help solve your problems, to translate your new ideas into profitable practice.

This MAN POWER is an integral part of the products you buy—assurance of quality and efficiency. That's why so many Bleach House Superintendents turn to bleaching headquarters—at du Pont.

**Reg. U. S. Pat. Off.*

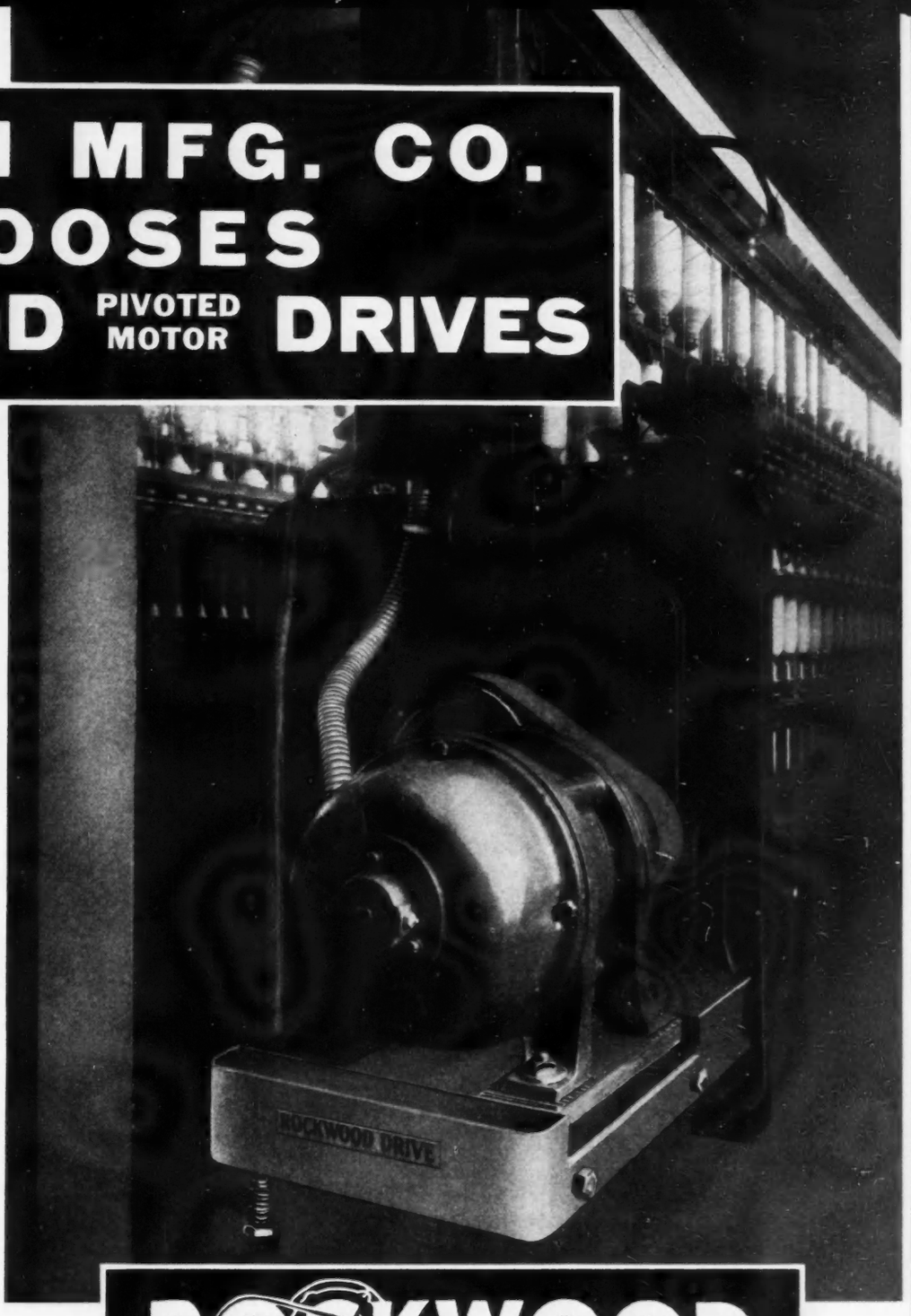
★ ***The "Cavalcade of America" Broadcast Every Tuesday Evening at 9 P.M.E.S.T., NBC Coast-to-Coast Network***

DU PONT
REG. U.S. PAT. OFF.

The R. & H. Chemicals Department
E. I. DU PONT DE NEMOURS & COMPANY (INC.)
Wilmington, Delaware

District Sales Offices: Baltimore, Boston, Charlotte, Chicago, Cleveland, Kansas City, Newark, New York, Philadelphia, Pittsburgh, San Francisco

MARION MFG. CO. CHOOSES ROCKWOOD PIVOTED MOTOR DRIVES



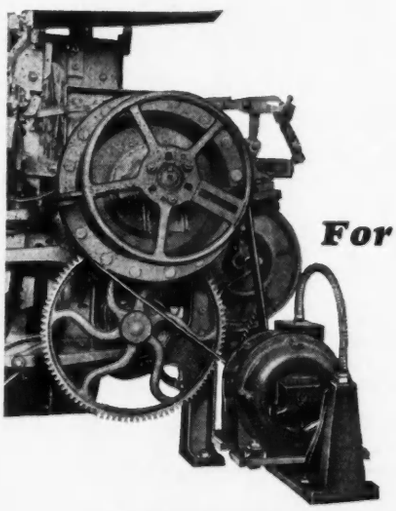
for more and better production from spinning frames

Another prominent cotton mill, Marion Mfg. Company of Marion, N. C., has chosen Rockwood Drives to assure increased production and a better quality of yarn from their spinning frames. Only one drive appears in the picture, but they have a large number.

Modernization, such as long-draft spinning, the use of larger packages, higher spindle speeds—all results in more and better production for less cost. ROCKWOOD Pivoted-Motor Drives for spinning and twisting frames and for looms match these improvements.

If you want "modern" drives that start their machines quickly and smoothly, that waste minimum power, that keep THEIR MACHINES RELENTLESSLY UP TO SPEEDS, and that require almost no maintenance, THEN DO AS MOST OF THE LEADERS HAVE DONE—put in Rockwood Pivoted-Motor Drives.

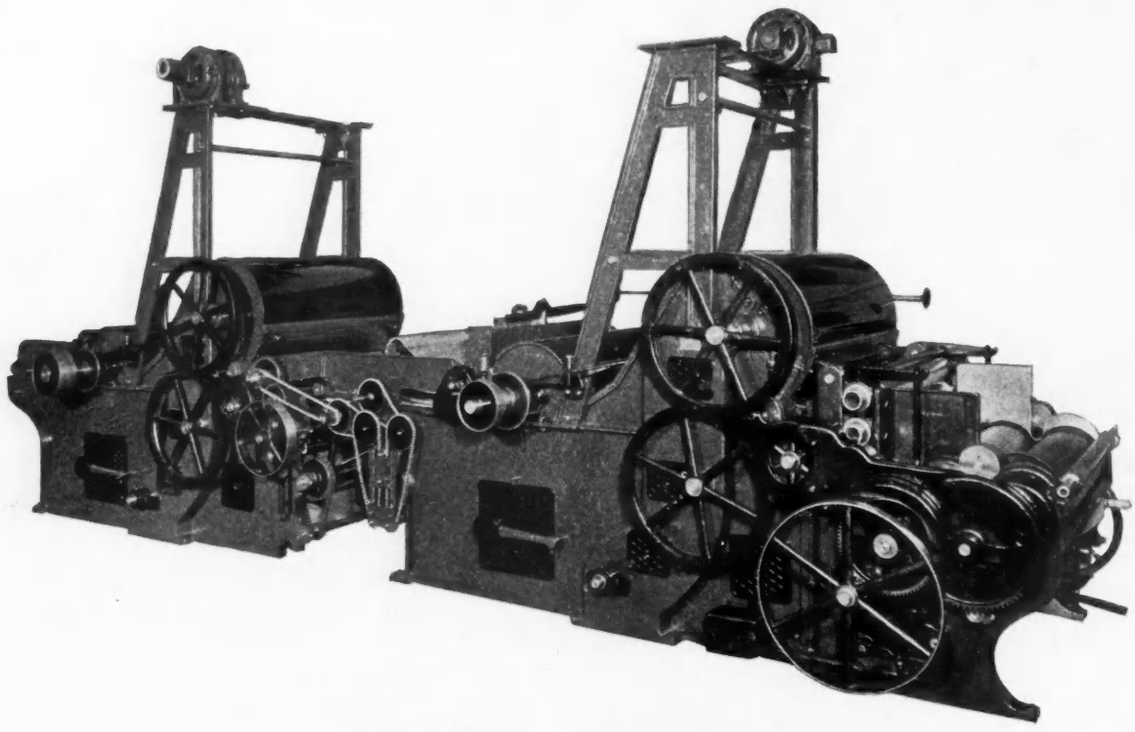
ROCKWOOD PIVOTED MOTOR DRIVE



For looms. Rockwood Pivoted-Motor Loom Drives are ideal for looms. THEY WILL RUN THEM AT A DEPENDABLE NUMBER OF PICKS per minute, per hour, and per day. Their use makes it easy and practical to change from lineshaft to individual drives. Their quiet, flexible belts eliminate the noise and high maintenance of gears. Full and *dependable* power is assured at all times.

Your inquiry on Rockwood Drives does not obligate you to buy. Rockwood engineers are familiar with textile drive problems, and their services are available to any mill, considering a "modernization" program, without obligation. May they be of service to you?

ROCKWOOD MANUFACTURING CO., INDIANAPOLIS



A NEW PICKER BUILT INTO OLD FRAMES

The working parts are new—the frame, which will last forever if not broken, is old.

The cost is therefore about half the cost of putting the new working parts into new frames.

The picker is equipped with the Aldrich Synchronizer which has uniformly produced laps making evener card sliver than laps produced by any other picking system.

This picker is arranged to be fed either with the conventional hopper feeder or directly from the Gyrator, Cleaning, Blending and Distributing Machine provided with automatic feed boxes.

Every modern improvement which should be on a picker is built into this one—there is nothing old about it but the framework.

Your old pickers can be made into new pickers right where they sit on the floor, with little delay or inconvenience.

AldricH MachinE

Greenwood, **WorkS** South Carolina

TALK ABOUT INSTANT WETTING OUT...

• Here's how WETSIT saves you time and money in textile processing—and in *every* operation in which you want complete penetration—*instantly!*

For free samples of WETSIT—or help on your special problems, just let us know. Our laboratories are at your service.

How you can use WETSIT..

- To aid scouring, bleaching, fulling, yarn conditioning, sizing, rinsing.
- Pre-wetting out to dyeing, printing, sanforizing, kier-boiling.
- Hosiery boil-off, package dyeing machine, etc.
- In soaking emulsions for throwing of silk.
- With printing pastes, to insure penetration.
- To disperse vat dyestuffs, etc.
- In humidifying systems.

Why WETSIT does it better..

- By actual test (Draves method) WETSIT wets out *faster*—at lower concentrations.
- Completely soluble, easily rinsed out.
- pH of 7.0 to 7.2 in any dilution.
- Equally efficient in neutral, acid or alkaline conditions.
- Not affected by calcium and magnesium salts of hard water.
- Disperses and suspends lime curds formed by soap. Makes rinsing easy.
- Compounds with all types of sulphonated and saponified fats. Speeds absorption.

WETSIT

Also Wetsit Concentrated and Wetsit Extra

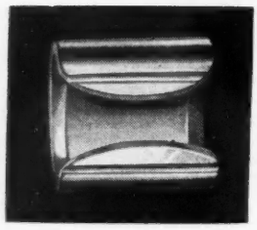
WOLF BRAND PRODUCTS

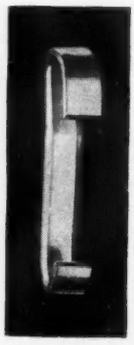
JACQUES WOLF & CO.

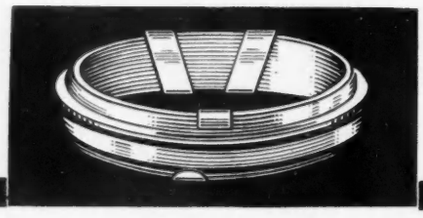
Chemicals PASSAIC, N. J.

WAREHOUSES: Providence, R. I., Philadelphia, Pa., Utica, N. Y., Chicago, Ill., Greenville, S. C., Chattanooga, Tenn.
Midwestern Distributor: Bradley F. Marthens, Milwaukee, Wisc.

U.S. Ring Travelers







CONSISTENT PRODUCERS

FOR YOUR *Profit Staff*—

U. S. Ring Travelers are securely sealed in these containers.

U. S. Ring Travelers guarantee the qualities which help to produce greater efficiency in your spinning room, and ultimately—greater profits for you in production.

U. S. Ring Travelers are precision made by skilled workers—working with the best materials. Every ring stays securely on every frame—at high speed—and the speed cools the traveler.

Avoid trouble—extra costs from delays caused by ordinary ring travelers. Get more efficiency—greater profits. Standardize on U. S. Ring Travelers. Write today for free samples and prices.

Southern Sales Representatives:

WILLIAM P. VAUGHAN, P. O. Box 792, Greenville, So. Carolina

TORRENCE L. MAYNARD, P. O. Box 456, Belmont, No. Carolina

WILLIAM H. ROSE, Greenville, South Carolina.

OLIVER B. LAND, P. O. Box 158, Athens, Georgia

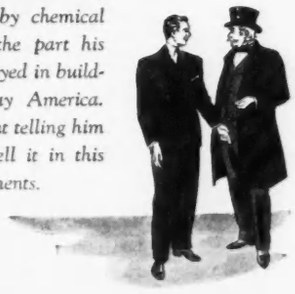
U. S. RING TRAVELER COMPANY

PROVIDENCE, R. I. GREENVILLE, S. C.

AMOS M. BOWEN
President and Treasurer

10,000 HORSELESS CARRIAGES A DAY

Suppose someone who lived forty or fifty years ago—say one of the founders of Mathieson—could pay us a visit today. And suppose we could have the pleasure of showing him the sights of 1940, of explaining the vast changes that have taken place since the turn of the century. What do you think would amaze the old gentleman most? If he were one of the pioneers who founded Mathieson, we believe he would be most interested in the revolutionary changes wrought by chemical progress and in the part his successors have played in building the present-day America. We would go about telling him the story as we tell it in this series of advertisements.



● **Yes, Mr. M.—the modern world is using over forty million motor vehicles, and a new generation has grown up who never heard the old jeer, "Get a horse!" New highways criss-cross the continent, dotted with fleets of motor-trucks, motor-buses and a multitude of family cars.**

Your successors at Mathieson, Mr. M., have had their share in promoting the growth of the great automotive industry which has "put the world on wheels". For Mathieson Chemicals enter into the manufacture or processing of nearly everything about the modern motor vehicle—glass, upholstery, tires, lacquer finish, plastic and metal parts, high test gasoline, oil and grease—even lamp filaments in headlights and anti-freeze in the radiator!

Constantly pioneering—constantly improving production and distribution methods to achieve new standards of quality and economies in raw materials—Mathieson has made basic contributions to the development of this and other great American industries.

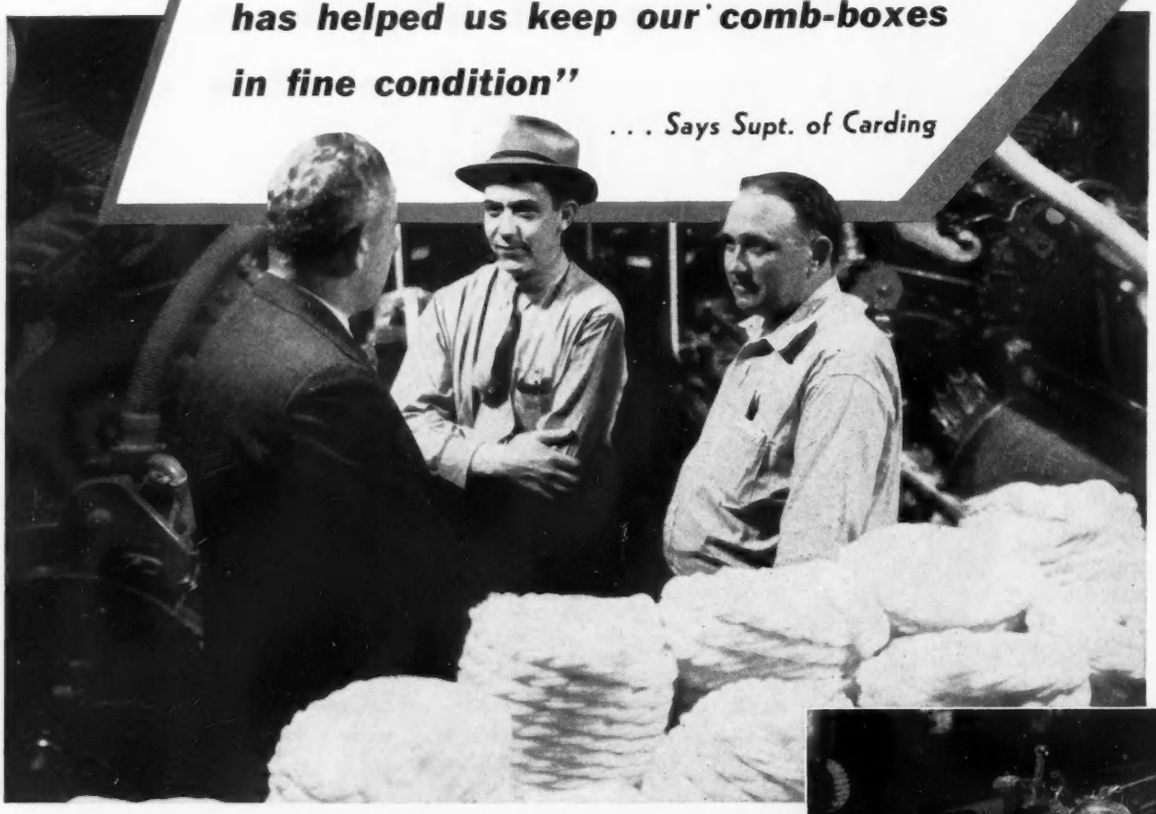
MATHIESON CHEMICALS

SODA ASH . . . CAUSTIC SODA . . . BICARBONATE OF SODA . . . LIQUID CHLORINE . . . BLEACHING POWDER . . . HTH PRODUCTS . . . AMMONIA, ANHYDROUS and AQUA . . . FUSED ALKALI PRODUCTS . . . SYNTHETIC SALT CAKE . . . DRY ICE . . . CARBONIC GAS . . . ANALYTICAL SODIUM CHLORITE

THE MATHIESON ALKALI WORKS (INC.)
60 E. 42ND STREET, NEW YORK, N. Y.

"GULF UNIVERSAL OIL has helped us keep our comb-boxes in fine condition"

. . . Says Supt. of Carding



"We have proved the Economy of GULF'S higher quality lubricants over a period of many years"

"IT has been many years since our cards were installed, but our comb-boxes are in excellent condition, thanks to the efficient lubrication we have had from Gulf Universal Oil. We keep the Gulf engineer 'in the picture' in our mill and have had real benefits from the service he extends."

If you are not entirely satisfied with your production from the standpoint of quality, quantity, or cost, we suggest that you pay particular attention to your lubrication. Ask the Gulf engineer who calls at your mill to suggest the proper application of improved lubricants which have been manufactured to meet present-day needs in textile plants. His broad experience in the field qualifies him to give you sound recommendations that will improve the operation of your equipment all along the line. When you put his suggestions to work, you can expect your machines to perform efficiently with lowest possible costs for maintenance and lubrication.

The broad distribution of Gulf products through more than 1100 warehouses in 30 states from Maine to New Mexico insures you of prompt delivery of the products you need. Write or 'phone your nearest distributing point today.

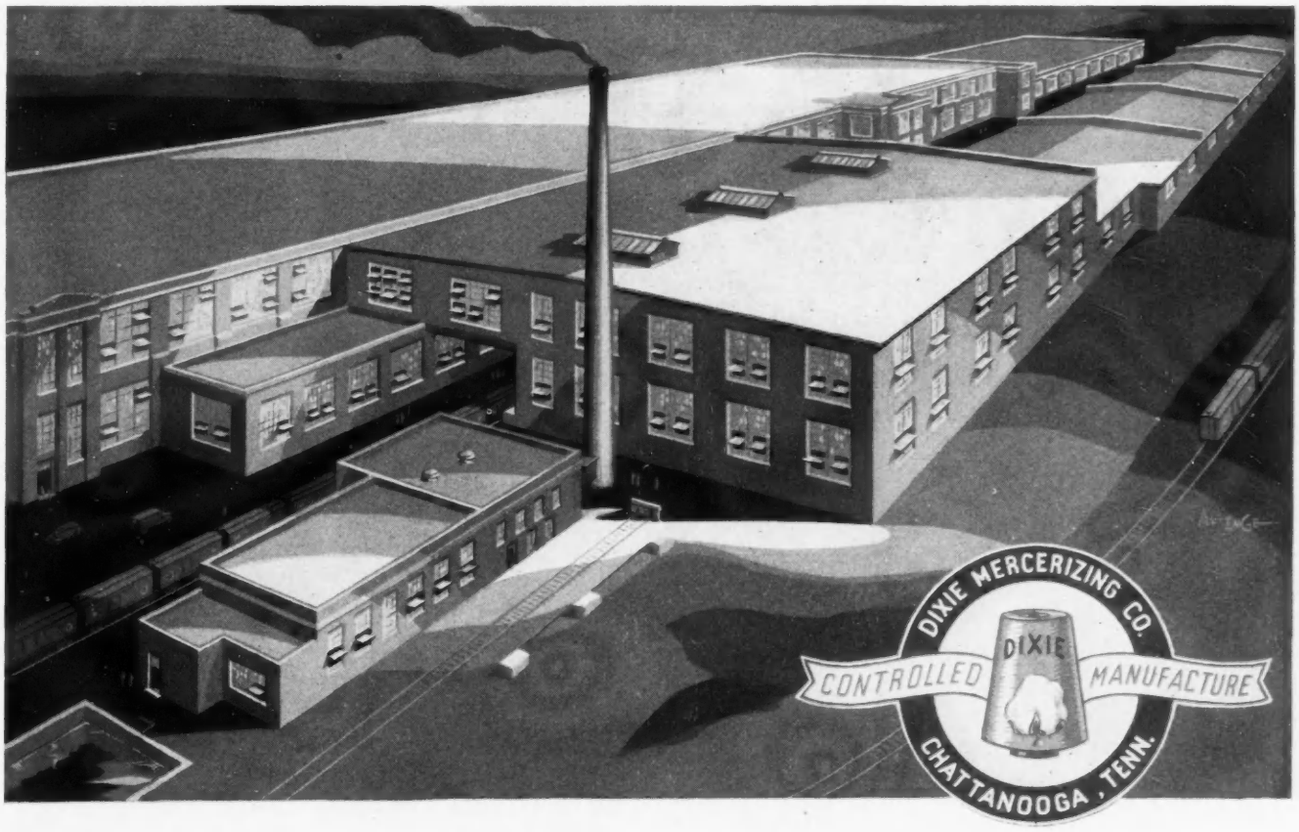
"We pay particular attention to the lubrication of our looms," says this Overseer, "and it pays us to carry out the Gulf engineer's recommendations. Proper lubrication is helping us make a splendid operating record."

GULF INDUSTRIAL LUBRICATION

GULF OIL CORPORATION · GULF REFINING COMPANY

GULF BUILDING, PITTSBURGH, PENNSYLVANIA

ALSO A COMPLETE LINE OF FUEL AND FURNACE OILS



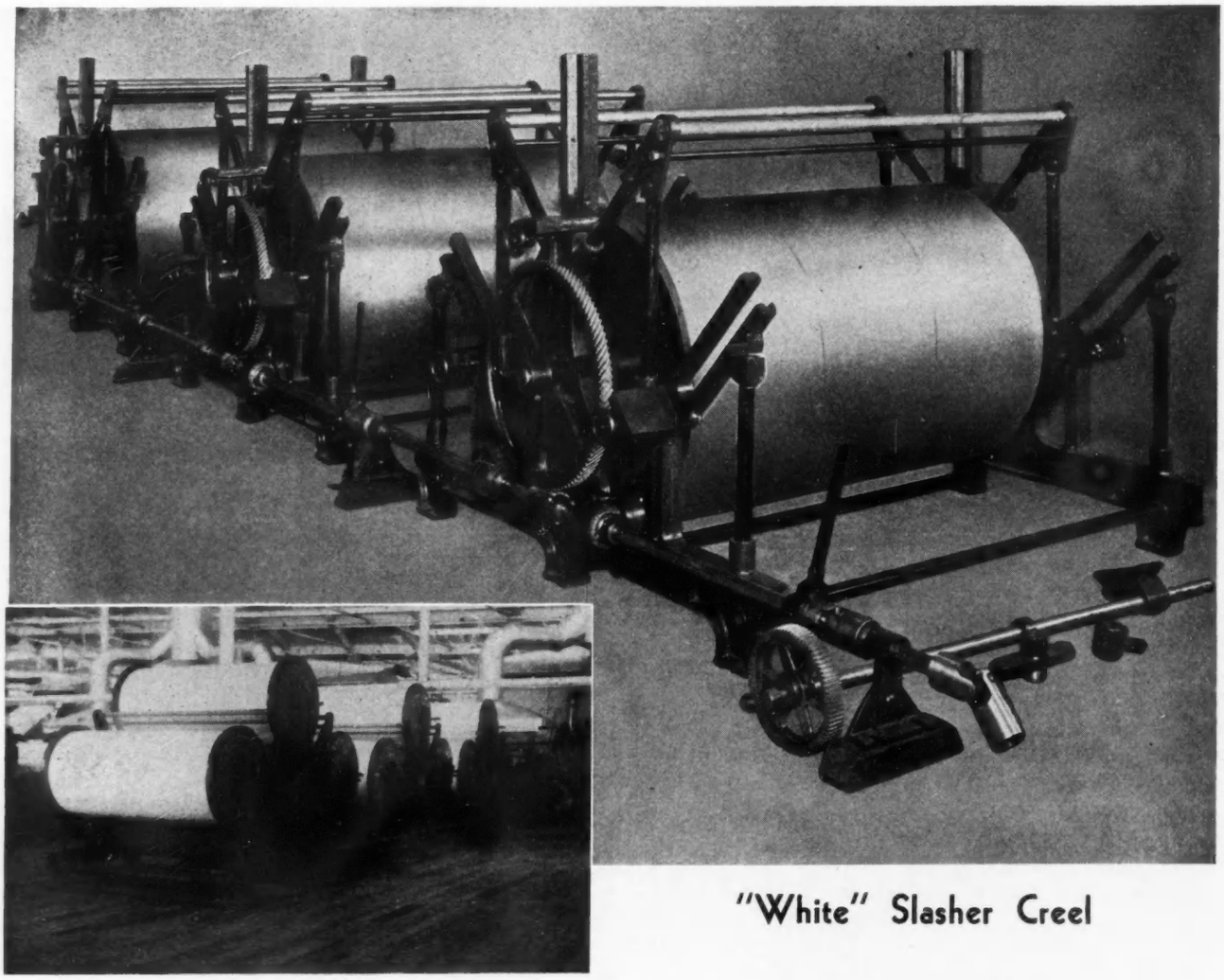
DIXIE DURENE'S LATEST STEP

"Controlled Manufacture" is a constantly forward-moving program at Dixie Mercerizing Company, of Chattanooga, Tennessee. Step by step, as demand and advancing technique dictated, their great plants have grown not only in size but in perfection of that vital Control.

From raw cotton to finished yarn, every operation is a Dixie controlled operation. And the efficiency of plant layout, equipment and personnel reflects itself in the year after year progress this company has made in establishing itself as a quality leader in its particular field.

Today they are completing another forward step, the reorganization of preparatory departments, including a new opener and picker building. And, as has been the case since the first unit was built 18 years ago, the project is under the supervision of the Robert and Company staff.

ROBERT AND COMPANY
ATLANTA INCORPORATED GEORGIA
Architects and Engineers



"White" Slasher Creel

The Answer To Your Slasher Creel Problems!

A positively driven slasher creel that removes the yarn from section beams and delivers it to the sizing vat with or without tension as desired. Each unit is capable of handling three beams, and as many units as are desired may be coupled together to give the required beam capacity. Each beam is in contact with the positive driven equalizing drum, and when slasher is running, the same amount of warp yarn is removed from each beam regardless of the diameter of the warp roll. The yarn is removed without tension or strain, practically eliminating breakage and loose ends. Beams having the same amount of warp at start of set will all empty at the same time, cutting the waste to a minimum. It is the answer to your creel problems.

We also manufacture special equipment that enables a slasher operator to regulate the warp tension during the slashing process. When used in conjunction with the "White" Slasher Creel, an absolute control of warp tension is secured. Regulation is sensitive and easily adjusted.

Also manufacturers of loom beams, West Point Energy Loom Drives, cloth room machinery, textile machinery parts and gears, special textile machinery.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

A NOVEL WAY TO SAVE MONEY

This interesting old-fashioned mechanical bank, one of a large private collection, is inscribed, "I always did 'spise a mule". When you place a coin in the darky's mouth and press down a lever the mule rears, throwing the darky headfirst against the log. As his head strikes the log the coin is dislodged and falls into the bank through the slot.

SAVE MONEY WITH CYANAMID'S TEXTILE SPECIALTIES, TOO

Cyanamid's line of Textile Specialties is wide in variety and includes many products that offer new opportunities to effect important economies while obtaining the highest quality results in the processing of the various types of textile fabrics. Our staff will be glad to show you how these Specialties can be used efficiently and economically in your processes. See Cyanamid for high quality and prompt service in

SULPHONATED OILS **SOFTENERS**

PENETRANTS **SIZING COMPOUNDS**

DECERESOL* WETTING AGENTS

*Registered U. S. Patent Office

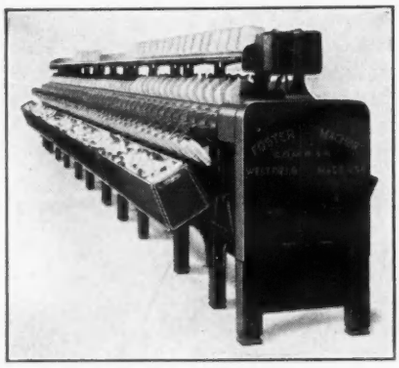
AMERICAN CYANAMID & CHEMICAL CORPORATION

30 ROCKEFELLER PLAZA · NEW YORK, N. Y.

FOSTER MODEL 102 CONES THEY'LL OPEN THE DOOR OF ANY KNITTING MILL

YOUR REPUTATION .. WINDING MAKES IT OR BREAKS IT

Knitters KNOW from experience that these cones will deliver properly on the knitting machines. That's because the Model 102 produces a cone of uniform density, with the correct taper and because it can be quickly and cheaply adjusted to produce the proper angle of wind for the count and type of yarn.



Visit us at the Knitting Arts Exhibition, Booths 346, 347 and 362.

Why not put Model 102 cones on YOUR sales force?

You'll also save money in your plant by doing it, because the Model 102 winds twice as much yarn at ⅓ less cost as do older types of machines.

FOSTER MACHINE COMPANY
WESTFIELD, MASS.
Southern Office:
Johnston Bldg., Charlotte, N. C.

FOSTER MODEL 102

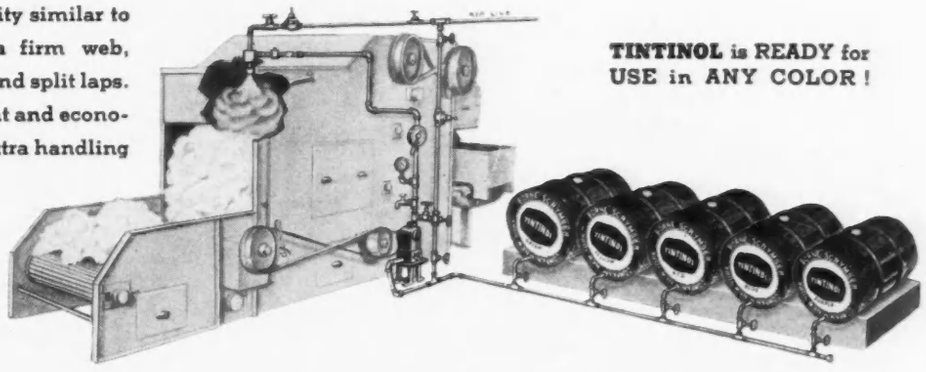
FOR WINDING COTTON, MERCERIZED, WOOLEN, WORSTED, MERINO, SPUN SILK AND SPUN RAYON YARNS

Here's a TWO-WAY GRIP On Processing CONTROL!

IDENTIFY *your* RAYON *with* TINTINOL

Certified Fugitive Dyes for all Synthetic Fibres and Admixtures.

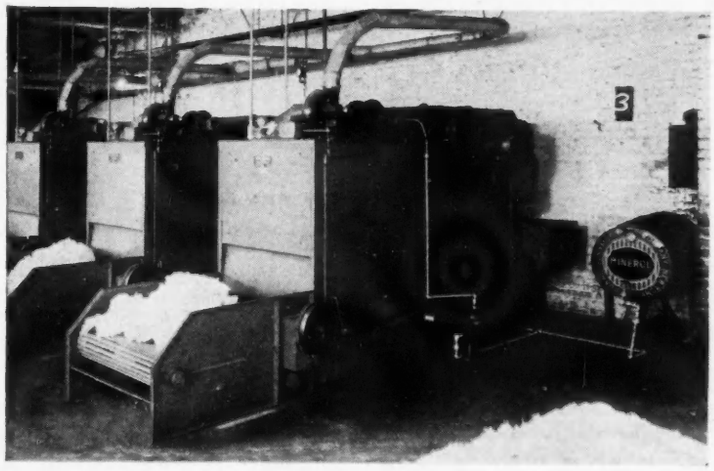
● **TINTINOL** involves the control of *three* essential factors in Rayon Manufacturing by *one* simple application..Moisture, Lubrication, Tinting.● **TINTINOL** imparts tenacity similar to good running cotton, produces a firm web, reduces the crunch, reduces static and split laps. ● **TINTINOL** is the most convenient and economical tinting process known. No extra handling ..no drying..no heating..no harsh stock or curled fibres. ● **TINTINOL** is shipped in light steel drums which serve for supply reservoir. You can have *any* color by the turn of a valve.



TINTINOL is READY for USE in ANY COLOR!

Base Oil (SS) Concentrate is also available for conditioning white Rayon stocks where tinting is not necessary.

MINEROL FIRST and FOREMOST CONDITIONING AGENT for Textile Fibres.



● **MINEROL** is a prepared agent for conditioning textile fibres..a systematic Process of Spraying Natural and Dyed Raw Stock. ● **MINEROL** helps to separate long fibres from the short. It saves *good fibres* and prevents waste. It makes fibres more supple..more pliable.● **MINEROL** provides *control* of conditions caused by static electricity. It protects the cards and preserves the wire. ● **MINEROL** prevents Dust and Fly..safeguarding health and insuring better working conditions.● **MINEROL**..as a conditioner is more urgently in demand thru the increased use of staple Cut Rayon and its varied combinations with cotton, wool and other fibres.

BRETON MINEROL PROCESS PATENTED

BORNE SCRYMSER COMPANY

Originators of the BRETON MINEROL PROCESS for CONDITIONING FIBRE

17 BATTERY PLACE • NEW YORK

SOUTHERN SALES MANAGER • H. L. SIEVER, CHARLOTTE, N. C. • Representatives • R. C. YOUNG, CHARLOTTE, N. C. • W. B. UHLER, SPARTANBURG, S. C. • JOHN FERGUSON, LA GRANGE, GA. New England Representatives • A. M. KNIGHT, WEST YARMOUTH MASS. • F. L. EKSTRAND, STAFFORD SPRINGS, CONN.

ASHWORTH PIONEERS IN CARD CLOTHING

Practical Card Men

TO HELP SOLVE YOUR CARD CLOTHING PROBLEMS

The founders of this business were practical card men and our sales and service staff has been liberally supplied with men of the same type ever since.

Thus our representatives are prepared not only to sell you card clothing, but also to help you to apply and use it properly and to select the right type for the purpose. They "know what you're talking about" when you tell them your problem.

We were one of the earliest exponents of this principle and lead the field in adhering to it. Call on us to assist you in your card room.

ASHWORTH BROS., INC., Woolen Div., AMERICAN CARD CLOTHING CO.

3 FACTORIES — Fall River, Worcester, Philadelphia

6 REPAIR SHOPS — Fall River, Philadelphia, Charlotte, Greenville, Atlanta, Dallas

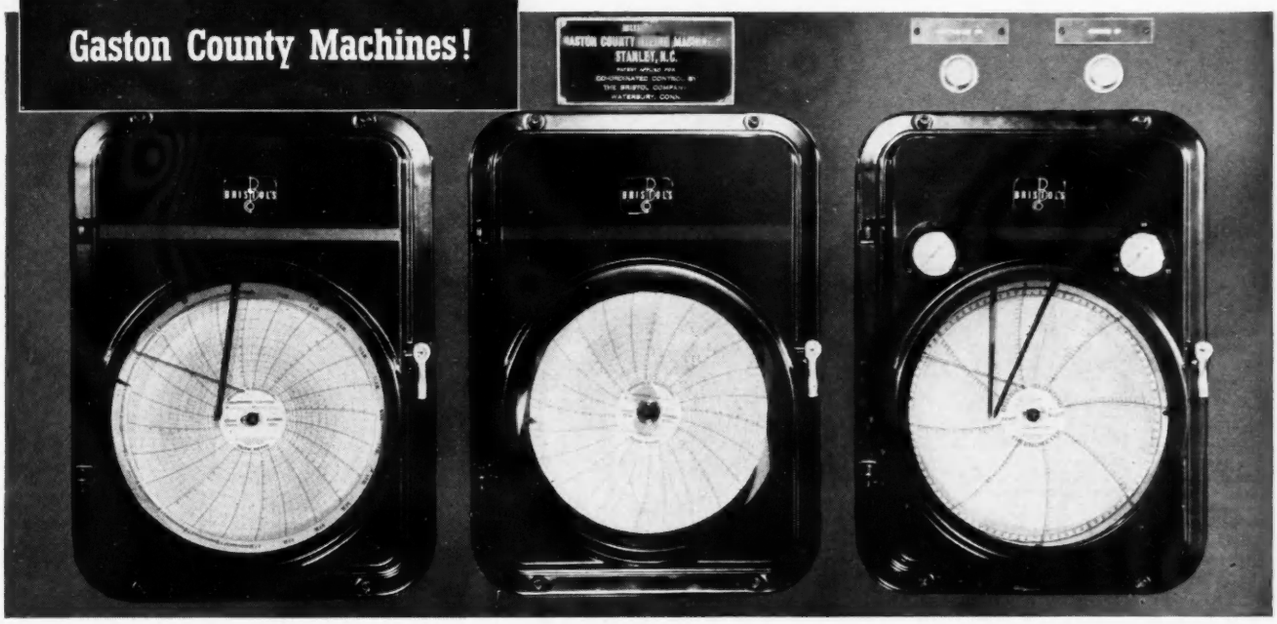
7 DISTRIBUTING POINTS — Fall River, Worcester, Philadelphia, Charlotte, Greenville, Atlanta, Dallas

★PRODUCTS AND SERVICES: Card Clothing for Cotton, Wool, Worsted, Silk and Asbestos Cards and for All Types of Napping Machinery • • Brusher Clothing and Card Clothing for Special Purposes • • Lickerin Wire and Garnet Wire • • Sole Distributors for Platt's Metallic Wire • • Lickerins and Top Flats Re-clothed at All Plants.

★ Southwestern Representative: Textile Supply Co., Dallas, Texas

Now, Improved Dyeing at Lower Cost

with BRISTOL'S-CONTROLLED Gaston County Machines!



WHEN you install a Gaston County Dyeing Machine, practically the entire dyeing process from beginning to end is performed automatically. The operator simply presses a button,—and, thanks to Bristol's Automatic Control, the bath is promptly brought up to the right temperature in accord with the desired time schedule. Dye liquor is swished back and forth through the fabric until each strand has been properly dyed. Then at the correct instant the motor is stopped and a signal light flashed, informing the operator to unload the kier.

Every step in the process is done on time every time. By the precision automatic control of all working conditions, dyeing is made uniform, steam consumption and dye materials are held at a minimum, time is saved and the operator's duties are greatly simplified.

WHAT BRISTOL'S AUTOMATIC CONTROL OF DYE PROCESS DOES:

Controls temperature at precisely the correct value.

Maintains the rate of temperature rise exactly the same every time for any given color.

Accurately regulates the time of each step in the process.

Automatically reverses the direction of circulation at uniform intervals,—resulting in even distribution of color between the inside and outside of the beam or package.

By graphically recording the pressure forcing the liquor through the beam, provides a constant check on the winding,—assuring that the beam is wound neither too tight nor too loose.

WHAT BENEFITS BRISTOL'S AUTOMATIC CONTROL OFFERS YOU:

Produces and reproduces a better and more uniform product.

Saves time and dye. By keeping all factors under rigid control, shades can be reproduced without running add-dyes.

Saves steam. None is wasted in overheating.

Relieves operator of laborious task of manually operating the reversing valve every five or ten minutes, adjusting temperatures every few minutes, and constantly watching clock in order to know when to perform the next step in the process.

Provides complete records for each lot of yarn dyed,—of especial value when certain conditions are to be duplicated in the future.

Saves space on the operating floor by eliminating levers and hand valves.

THE BRISTOL COMPANY
WATERBURY CONNECTICUT

Branch Offices: Akron, Birmingham, Boston, Chicago, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, St. Louis, San Francisco, Seattle. Canada: The Bristol Company of Canada, Limited, Toronto, Ontario. England: Bristol's Instrument Company, Limited, London, N.W. 10

BRISTOL'S
TRADE MARK REG. U. S. PAT. OFFICE
Automatic Dye Vat Control
AIR OR ELECTRICALLY OPERATED

The above illustration shows a recent installation of our latest type "automatically controlled" stainless steel "pressure type" combination beam—package—roving—dyeing and bleaching machines with movable carriers including extractor and blower type dryers—also a small lot package dyeing machine.

J. E. SIRRINE & CO., GREENVILLE, S. C., ENGINEERS

TODAY THEY WANT *Color*

WHETHER for towels, draperies, bathing suits, dresses or thread yarns—your customers want color.

With GASTON COUNTY'S NEW BEAM and PACKAGE DYEING MACHINES in your plant, you can supply this increasing demand for color efficiently and economically.

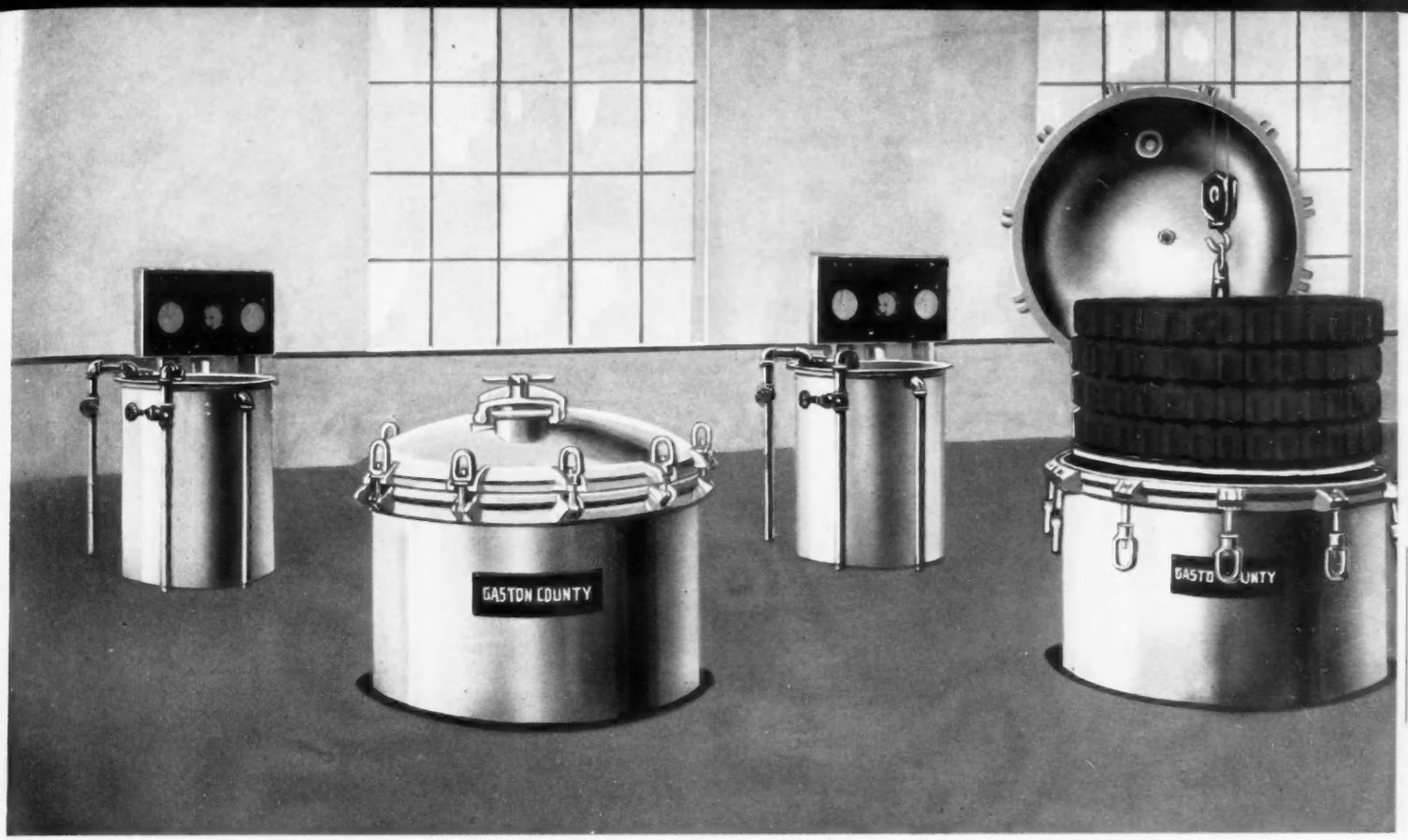
These machines are designed and built on the principle that they MUST be adaptable to your needs—your dyeing jobs do not have to be modified to fit the machine. The range and flexibility of Gaston County dyeing machines is unequalled—You can dye beams, cones, roving, springs, and tubes (5/8" or 1 5/8") all in the same machines by merely using the proper type material carriers.

Twenty years of specialization in building dye house equipment have resulted in many outstanding mills using our product.

Machines can be furnished built from Stainless Steel—Nickel Iron—Monel—in single or multiple kier set-ups in capacities from 1 to 2000 pound units.

Extracting Machines—Rapid "Blower Type" Drying Machines—Oven Type Package Dryers—Dye Beams—Package—Roving and Cone Carriers—Package Yarn Shaping Machines—Dye Tubes.

GASTON COUNTY
DYEING MACHINE COMPANY



The above illustration shows a recent installation of our latest type "automatically controlled" floor model stainless steel "pressure type" package dyeing machines with movable carriers arranged for dyeing of yarn on 5/8" dyetex tubes or 1 5/8" tubes or spiral springs, also cones. These machines can be set directly on working floor requiring no basement.

CONTROLLED DYEING INCREASES *Efficiency*

Eliminates Costly Mistakes

Gaston County Dyeing Machines are precision built in our own shops of the highest quality stainless steel rugged and compact in design.

Equipped with full automatic controls including flow reversal, time temperature controls, recording temperature charts, they enable you to keep each stage of your production under POSITIVE control—minimizing reject losses and banishing troublesome disputes. Our newly developed metal DYEING program charts for controls mean a permanent record and permit you to match shades perfectly. Automatic controls can be furnished "air" or "electrically" operated as desired. Extractors and dryers are also equipped with temperature controls.

Gaston County Dyeing Machines are also equipped with time tested "two-way—running wash system" and pressure flow control.

You should know all about the advanced design of our machines. Write us for complete detailed information.

Density Controls for Beam Warpers—Beam and Package Bleaching Machines —Auxiliary Equipment for Dye Houses—Sample Dyeing Machines—Hot Waxing Attachments for Thread Yarns—Emulsion Attachments for Knitting Yarns.

STANLEY, NORTH CAROLINA

U. S. A.

Golden Anniversary

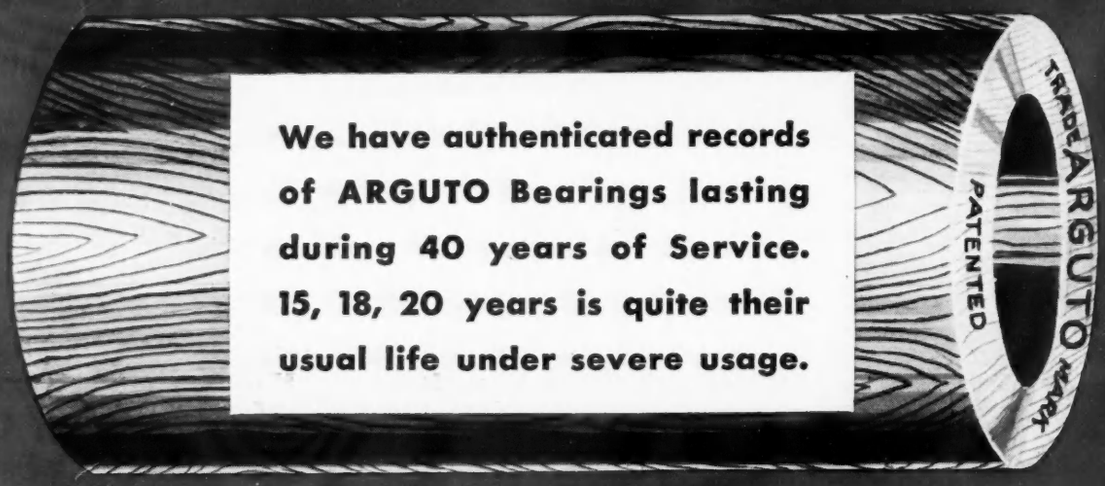
20 years

without a drink—

1890 — 1940

OILLESS BEARINGS

For 50 Years Arguto Bushings have out-lasted Bronze Bushings 7 to 1



We have authenticated records of ARGUTO Bearings lasting during 40 years of Service. 15, 18, 20 years is quite their usual life under severe usage.

WAYNE JUNCTION — ARGUTO OILLESS BEARING CO. — PHILADELPHIA, PA.

YOU'RE GOING TO SEE...

YOU'RE GOING TO HEAR...

of Fabric Treatments that Point to

"*CETOSOL"

YOU'LL HEAR **of a new high in weaving efficiency, brought about by an improved type of sizing.**

YOU'LL DISCOVER **an under-current of trade comment on a *superior* type of fabric finish . . a softer, fuller hand.**

YOU'LL BE MADE ***definitely aware*** **of the striking effects of "CETOSOL". . STEIN-HALL's New Synthetic Resin Development.**

YOU'RE SURE **to note improved color intensification on printed cotton goods, rayons, spun rayons and other synthetic fibres.**

Beat the "grape-vine" method of news relay on "CETOSOL" by prompt, first-hand information and practical demonstration in your own plant.

There's a *specific* grade of "CETOSOL" to fit nearly every textile processing purpose. You'll be amazed at the varied uses and flexibility of this product of original and careful research.

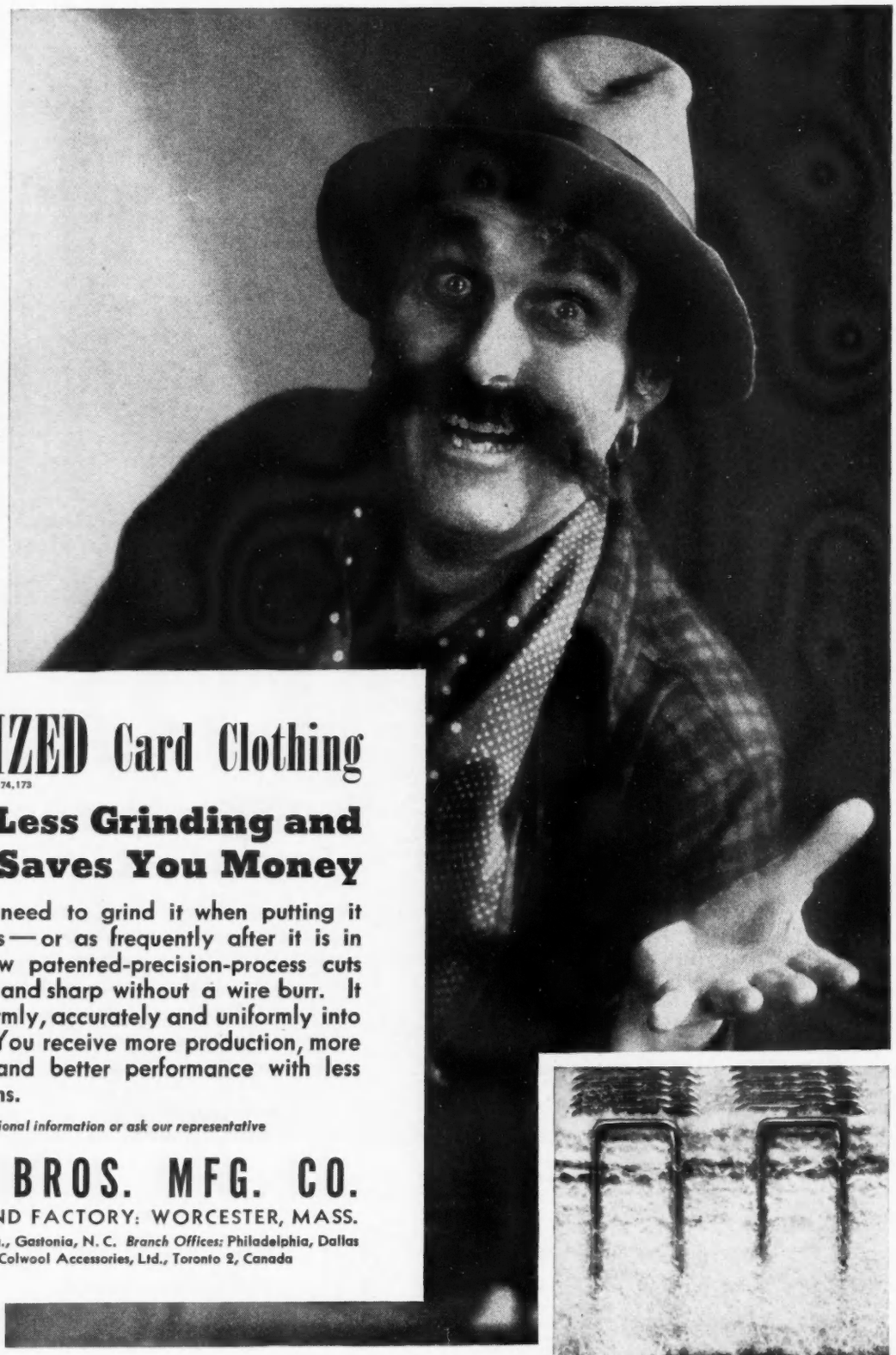
Established 1866

STEIN, HALL & COMPANY, Inc.

285 MADISON AVENUE NEW YORK

LABORATORIES AT . . NEW YORK • CHARLOTTE • PROVIDENCE

* Patents applied for



TUFFERIZED Card Clothing

U. S. PATENT NO. 2,174,173

Needs Less Grinding and Saves You Money

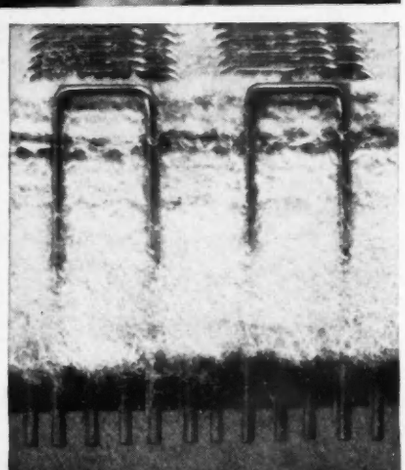
There is little need to grind it when putting it on your cylinders — or as frequently after it is in service. The new patented-precision-process cuts every wire clean and sharp without a wire burr. It seats every wire firmly, accurately and uniformly into the foundation. You receive more production, more uniform carding and better performance with less grinding operations.

Write for additional information or ask our representative

HOWARD BROS. MFG. CO.

HOME OFFICE AND FACTORY: WORCESTER, MASS.

Southern Plants: Atlanta, Ga., Gastonia, N. C. *Branch Offices:* Philadelphia, Dallas
Canadian Agents: Colwool Accessories, Ltd., Toronto 2, Canada



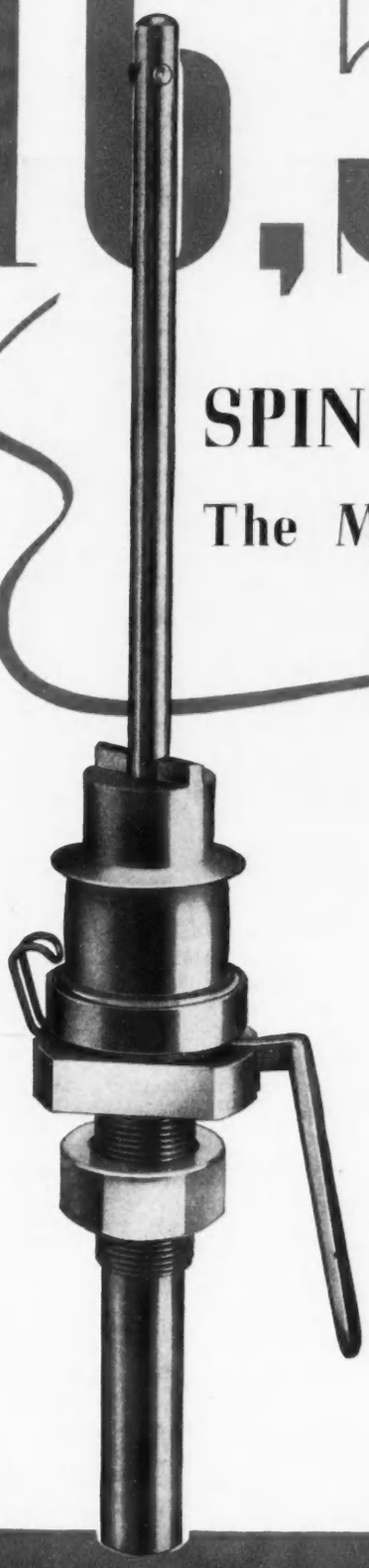
Microphotograph shows how Tufferized Card Clothing wires seat square, flat, and firmly into the foundation with wires parallel..even in length..spaced uniformly

Products: Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards — Napper Clothing, Brush Clothing, Strickles, Emery Fillets, Top Flats Recovered and extra sets loaned at all plants — Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant — Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted-Eye and Regular Wire Heddles

See us at Booth No. 442, 36th Knitting Arts Exposition

16,500

SPINDLES . . . Manufactured by The Marquette Metal Products Co.



. . . are now in successful operation in a modern rayon plant. They are helping to speed up production, reduce costs, and turn out better yarn. MARQUETTE NOVIBRA high-speed roller-bearing spindles can give *you* the same results. Illustrated circular will be mailed on request.

PROTECTED UNDER ONE OR MORE OF THE FOLLOWING U. S. PATENTS: 2168247, 2168248, 2168249.

MARQUETTE TEXTILE SPINDLES NOVIBRA

THE MARQUETTE METAL PRODUCTS CO.

1170 GALEWOOD DRIVE . . . . . CLEVELAND, OHIO

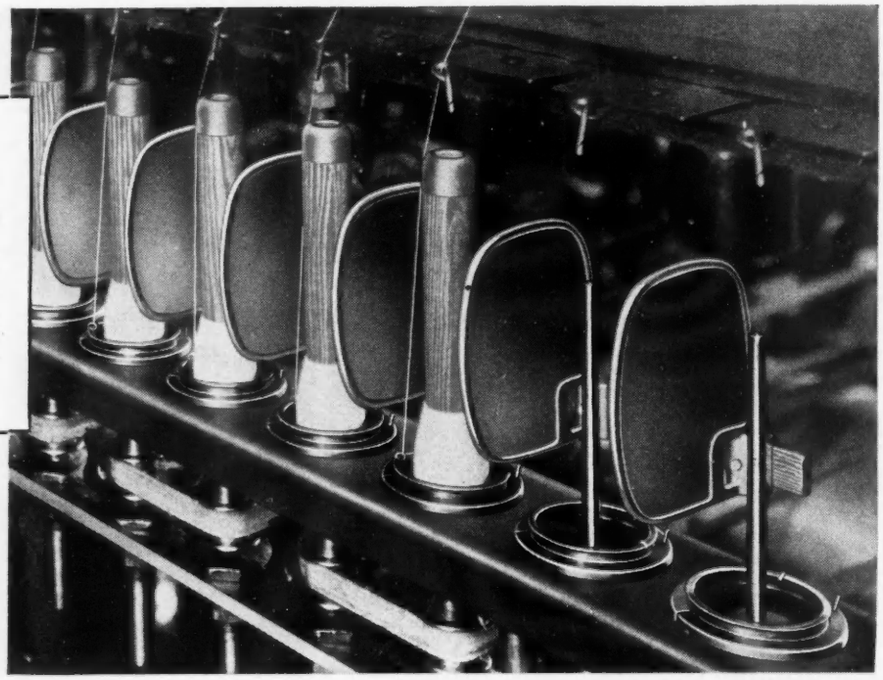
Byrd Miller, 908 Woodside Bldg., Greenville, S. C. . . . Stanley Morton, 25 West Dorrance St., Kingston, Pa.

IMPROVED OILS FOR HIGH-SPEED SPINDLES

Lubrication research keeps abreast of your most modern equipment . . . and protects your older machines as well

A MODERN SPINNING FRAME

For clean, economical operation, this machine needs but a small number of skillfully refined oils and greases, if you choose the right lubricant for each of its wide variety of parts.



Courtesy of Saco-Lowell Shops

No. 1 of a series of informative announcements by Shell on textile lubrication. Watch for the second in an early issue.

WHY is the textile industry spending about a hundred million dollars a year for new equipment?

And what does that fact do to your lubrication problems?

To the first question, you know most of the answers. It's because you are growing, making many changes, in a word—modernizing. Speeds are higher, packages are larger than you had dreamed of when many of your plants were built.

To the second question, you have probably given less thought than has the textile lubrication specialist. And to answer it, in a way that cuts power losses and protects machinery and product, lubrication men have had to find ways and means of dealing with an industry *in transition*. To take just one example, you are using more ball and roller bearings. We have seen this change on its way and have found lubricants to protect them—while still producing and improving the lubricants for your old-type bearings.

One Essential that Has *Not* Changed

You know the one "extra" which textile machinery demands over and above the properties which satisfy other industrial plants. That is, of course, the need for lubricants that do not tend to "throw," and damage your fibres in process.

Able research can go as far as it will toward checking vibration; may strive to refine more stable oils and greases . . . as long as no other end conflicts with this one ruling requirement.

Lubrication men have not regarded this as a limitation. Far from it. In recent years they have made marked progress in producing lubricants which are virtually non-staining . . . which have minimum tendency to throw.

Few Lubricants, Carefully Selected

There's still another way the lubrication industry demonstrates daily its importance to your business. By simplifying. When you look at the wide variety of moving parts in your equipment, you'll give us a share of credit for keeping down to a small number the oils and greases that enable your plant to run smoothly.

Your spindles run hundreds to one machine. There are cams; chains; ball, roller, and journal bearings; gears; saddles; rolls. Some are wick-oiled; some greased by hand; some get automatic lubrication. Yet your plant engineer will tell you that he gets clean, economical work from your machines by choosing the right lubricant for each from a relatively small list.

Ahead of Yourself?

In your own plant, the chances are right now that you're "ahead of yourself." That is, you've made many vital changes—but you've planned many others you want to make.

The same is true with the lubrication industry. We have learned many things about the safest ways to protect that costly investment of yours. Have you checked up recently to see where in your plant your lubricants might do better work? Call in your Shell lubrication man. His broad experience in solving textile lubrication problems may be the means of reducing your costs and protecting your product on your new machines—and your older ones as well.

SHELL

SHELL INDUSTRIAL LUBRICANTS

Unmistakable Identification

WHEN the wine steward selects the vintage for your approval, he's silent, but the label is eloquent. Your tongue would tell you the difference if you never saw the label. But how much better to lift the glass with perfect assurance. Your customers like that same assurance—which you can give them through Kaumagraph* Dry Transfers, Embossed Seals, Prestomarks and Lithographed Packing.

Identification Headquarters –

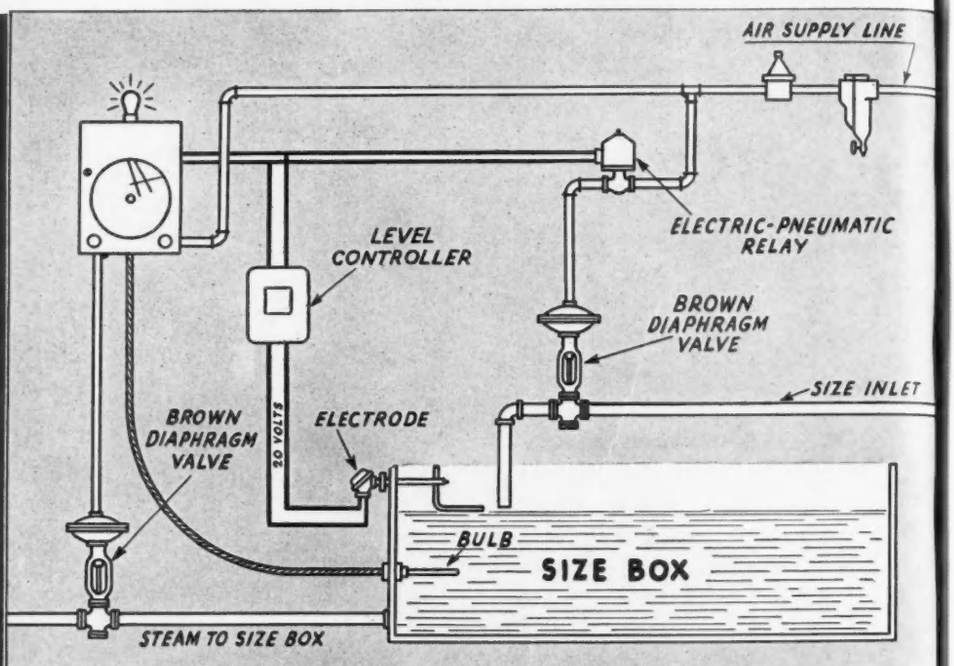
KAUMAGRAPH
16-22 E. 34th St., New York

*"Kaumagraphs" are made only by Kaumagraph Company

KAUMAGRAPH **DRY TRANSFERS**

General Offices and Plant, Wilmington, Delaware • Representatives in Principal Textile Centers of the World

A Practical Way to End SIZE BOX TROUBLES



BROWN SIZE BOX CONTROL SYSTEM

Improperly sized beams—mean trouble in looms and finishing. To avoid this difficulty, accurate control of both temperature and level of the size box is essential.

Proven results show that when temperature is held constant, the troubles caused by improper size viscosity are eliminated.

By maintaining size box level at the "right level", contact between the yarn and size solution can be standardized to insure correct saturation and uniform coating of the fibres.

The diagram above shows how the Brown Size Box Control System provides complete control of temperatures and levels.

The Brown Thermometer Controller governs the temperature of the size box to give yarn the necessary internal strength and elasticity to overcome strains in weaving. Brown Thermometer Controllers are throttling type, air-operated recorders which have a distinct advantage over on-off controllers in that they "graduate" the flow of steam to suit the requirement.

The Brown Liquid Level Controller maintains the size level at the "right level" to give the yarn compactness and smoothness to lay or bind the fibres in order to reduce frictional resistance in weaving. It operates from the electrical conductivity of the size itself. It detects variation in size level much faster than other systems. It is unaffected by foaming of the size solution or by air circulation and temperature changes.

The Brown Size Box Control System is simple, inexpensive and easy to install on any type of size box.

Send for Catalog No. 9304

This catalog fully describes the complete line of Brown Instruments and Minneapolis-Honeywell Controls for measuring and controlling moisture content, size cooking, bleaching, mercerizing, dyeing and other textile processes.

THE BROWN INSTRUMENT COMPANY, *a division of Minneapolis - Honeywell Regulator Co.,* 4492 Wayne Avenue, Philadelphia, Pa. Offices in all principal cities. Toronto, Canada: 117 Peter Street— Amsterdam-C, Holland: Wijdesteeg 4 — England: Wadsworth Road, Perivale, Greenford, Middlesex— Stockholm, 16, Sweden: Nybrokajen 7.

BROWN THERMOMETER CONTROLLERS
and
MINNEAPOLIS-HONEYWELL CONTROL SYSTEMS

To Measure and Control is to Economize

Ready

TO DROP IN PLACE!

Correct in Metal, Weight and Chamfer!

There's no time wasted in preparation of pipe-joints for the welder when you use Grinnell Welding Fittings. Every fitting drops into place in your pipe layout . . . ready for immediate, easy welding.

Grinnell Welding Fittings are correctly *engineered*. The metal and end-thickness are identical with seamless pipe or tubing; dimensions are accurately held to specifications; ends are properly scarfed. You get quicker, better welding, and joints that remain trouble-free.

Specify Grinnell Welding Fittings for both installation and maintenance economy in welded piping. Write for catalog, "Grinnell Welding Fittings." Grinnell Co., Inc., Executive Offices, Providence, Rhode Island. Branch offices in principal cities.

WELDING FITTINGS BY

GRINNELL

WHENEVER **PIPING** IS INVOLVED

Proved by more than a year's extensive use in leading textile mills and backed by 25 years' experience in development, testing and production—these tempered Dayco Roll Covers are products of Dayton's famed laboratory controlled manufacturing methods.

These Dayco Tempered Roll Coverings represent the finest product of skilled labor, modern equipment and quality materials. They set an entirely new standard of efficiency and economy. They have the proper coefficient of friction. Because they are vulcanized, they have no cold flow and are unaffected by temperature changes. Very resistant to oxidation and abrasion, they are static free and oil resisting.

Prove, in your own mill, the overwhelming advantages of these tempered Dayco Roll Covers. For details write to

THE DAYTON RUBBER MFG. CO.
TEXTILE PRODUCTS DIVISION, Dayton, Ohio
Originators and Pioneers of Dayco Tempered Roll Covering

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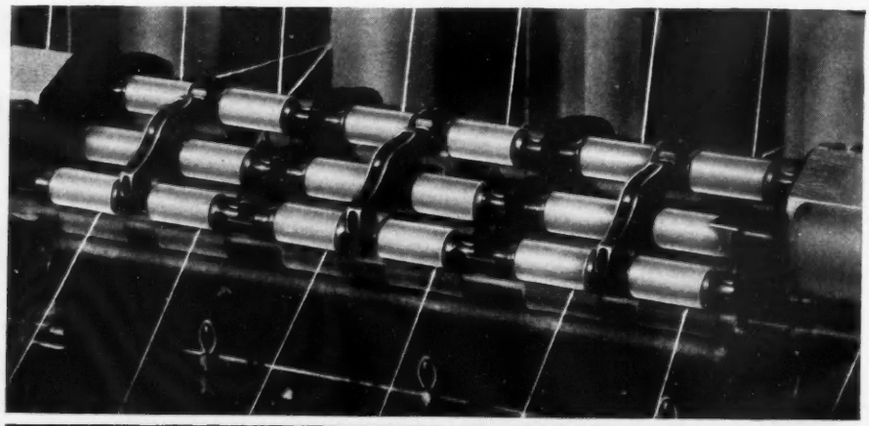
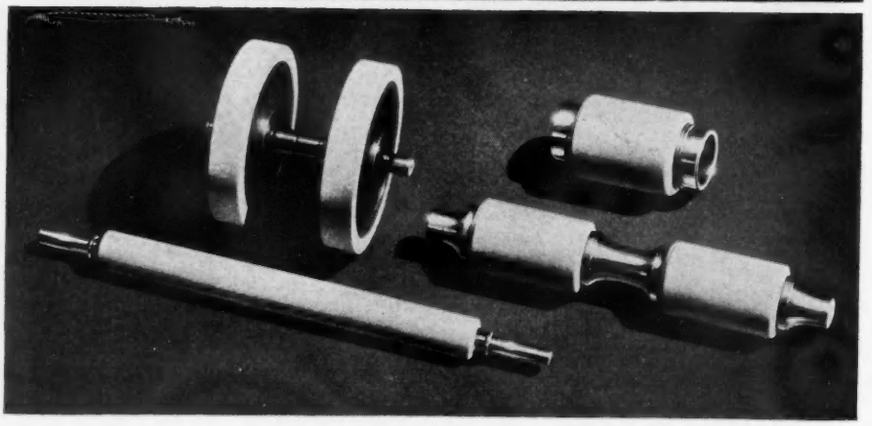
GREENVILLE SALES OFFICE
Room 702 Woodside Building
GREENVILLE, S. C.





CHECK AND PROVE FOR YOURSELF THESE OVERWHELMING ADVANTAGES OF DAYCO ROLL COVERING

1. Improved drafting.
2. Less ends down at all times.
3. Not affected by temperature changes.
4. Lower net roll costs.
5. Long service life.
6. Easy to apply.
7. Proper cushioning.
8. Unaffected by hard ends.
9. Static free.
10. Oil resisting.
11. One piece tubular construction.

Dayton
Dayco *TEMPERED* **ROLL COVERING**
AN ORIGINAL AND EXCLUSIVE DEVELOPMENT
SPECIFICALLY DESIGNED AND PROVED FOR THE SPINNING OF FINE YARNS
Made by the World's Largest Manufacturer of V-Belts

NEW!

DULUX HIGH-HIDING MILL WHITE OFFERS YOU NEW LOWS IN OVERHEAD

Makes ONE-COAT Jobs Possible!

SEVERAL YEARS AGO, when DULUX Mill White was developed, it created a new standard for mill whites. And once again, Du Pont takes another step into the lead . . . with the new DULUX High-Hiding Mill White.

Du Pont honestly believes, from its knowledge of the trade, that DULUX High-Hiding Mill White will give you better performance and lower costs than any other mill white yet developed.

For here's a white that frequently does the job with *only one coat.*

It's a carefully balanced combination of properties that put DULUX High-Hiding Mill White in a class by itself: The easy, quick application qualities of the old oil-type product *plus* the unusual film properties of DULUX.

The result is a mill white of brilliant, uniform whiteness, even on rough surfaces . . . maximum light reflection . . . amazing whiteness retention . . . washability.

And with the well-known durability of DULUX products, DULUX High-Hiding Mill White lengthens the time between repaintings . . . cuts yearly paint maintenance costs to all-time lows.

If you'd like full information about this new mill white, a Du Pont Maintenance Engineer will be glad to demonstrate its outstanding advantages in your own plant. Or write to E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington, Delaware.

DU PONT ON THE AIR: "Cavalcade of America" Tuesdays, 9 p.m., E.S.T., NBC networks

Fast Application

● DULUX High-Hiding Mill White goes on fast. With one-coat jobs frequently possible, it means the work is completed much quicker than when several coats are needed. In addition, DULUX has extremely easy working qualities that speed the job even more.

Intense Hiding—Excellent Spreading Rate

● Du Pont chemists have developed a method of *increasing the concentration of high-hiding pigment particles in suspension . . . while maintaining an unusually good spreading rate.* This stepped-up hiding is so intense that DULUX often does the job with only one coat.

New Lows in Application Cost

● You slash labor time (which is usually about 80% of the cost of the job) when you use DULUX—especially if your present paint is in such condition as to need only one coat. In addition, you need buy only enough material for one coat instead of several.

DU PONT
REG. U. S. PAT. OFF.

DULUX
REG. U. S. PAT. OFF.
HIGH-HIDING MILL WHITE

E. I. du Pont de Nemours & Co. (Inc.), Dept. C-40
Finishes Division, Wilmington, Delaware

Please see that I get complete information about DULUX High-Hiding Mill White—and your new booklet.

Name.....

Address.....

City.....State.....

Get the whole picture . . . .

Georgia's attractions for industry go far beyond a simple catalogue of raw materials, splendid transportation, beneficent climate, intelligent labor, abundant low-cost power and the other *usual* requirements. Learn the *unusual* story of Georgia. Get the whole picture! Our new 48-page, profusely illustrated book, "Georgia on the March," will take you on a revealing tour of the state. We will be glad to mail you a copy, on request.

Industrial Department

Georgia Power Company

ATLANTA

ONCE THEY FOUGHT

NOW THEY'RE PALS

How "spotty humidity" was conquered by Sturtevant Plan 2

High temperatures and spotty humidity used to be problems in the Twister Room of the Rocky Mount Mills, Rocky Mount, N.C., makers of carded cotton yarns. But no more!

Since Sturtevant Vap-Air Blender Units were installed, at comparatively low cost, to supplement existing humidifying heads, there have been no more heat and humidity troubles. And the Twister Room is enjoying the five outstanding advantages listed in the panel to the right.

Each of the Sturtevant Vap-Air Blender Units, installed under Sturtevant Plan #2 described below, consists of a mixing chamber and pressure fan attached to supply duct. Outside air, humidified room air, or both, are drawn into the mixing chambers by the fans and distributed uniformly throughout the room. Temperature reduction is accomplished through increased evaporative cooling effect. Constant regulation, adequate ventilation and maximum cooling effect are assured by automatic control.

Let Sturtevant show you how your cooling and humidifying problem can be effectively solved—and at a cost to fit your pocketbook. Our over 75 years of air engineering experience are at your service.

COOLING AND AIR CONDITIONING DIVISION • B. F. STURTEVANT COMPANY
Hyde Park, Boston, Mass. Atlanta Camden Chicago Greensboro Los Angeles New York

AND SO . . .

in this Twister Room of the Rocky Mount Mills—

1 constant relative humidity is now maintained.

2 temperature of room reduced—8 to 10° F.

3 end breakage on twisters decreased.

4 satisfactory regain of finished yarn assured.

5 and working conditions improved.

Sturtevant
REG. U. S. PAT. OFF.
Puts Air to Work

PLAN 1.

Vap-Air Units—An extremely low cost standardized unit for room cooling in conjunction with an existing humidifying system, supplying automatically controlled outside air. Easily installed by mill mechanics, it maintains even relative humidity at all times, prevents over-humidification, insures uniform distribution of air. All under automatic control.

PLAN 2.

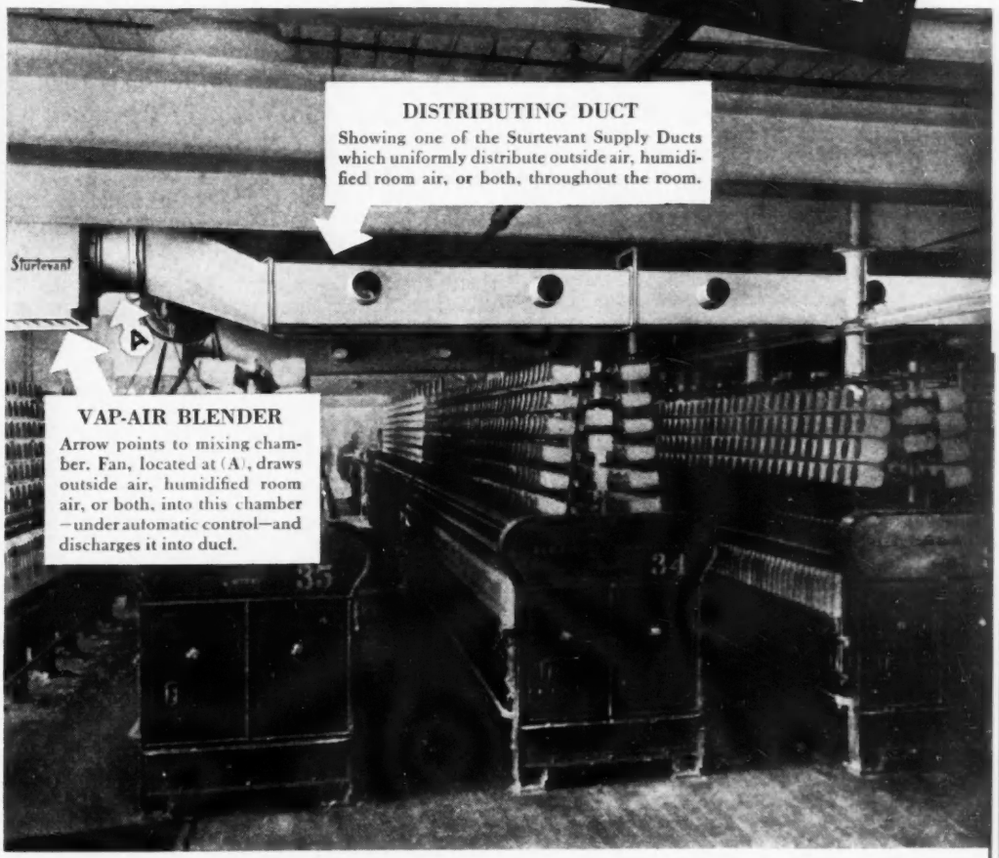
Vap-Air Blender Units Plus Your Head System—A carefully engineered low cost system which provides a *guaranteed* summer temperature reduction. Installation under the supervision of Sturtevant experts includes revision of present humidifying system so as to provide desired degree of temperature reduction most efficiently. All under automatic control.

PLAN 3.

Sturtevant Textile Evaporative Cooler and Humidifier System—A "tailor-made" system, completely installed, of either several unit systems, or one large system. Provides lowest possible temperature obtainable without use of refrigeration. All under automatic control.

PLAN 4.

Sturtevant Textile Evaporative Cooler and Humidifier System Combined with Supplementary Head System—Essentially the same as Plan 3 but adapted for rooms requiring relative humidity above 65%. All under automatic control.



DISTRIBUTING DUCT
Showing one of the Sturtevant Supply Ducts which uniformly distribute outside air, humidified room air, or both, throughout the room.

VAP-AIR BLENDER
Arrow points to mixing chamber. Fan, located at (A), draws outside air, humidified room air, or both, into this chamber—under automatic control—and discharges it into duct.

COOLING & HUMIDIFICATION TO FIT YOUR POCKETBOOK

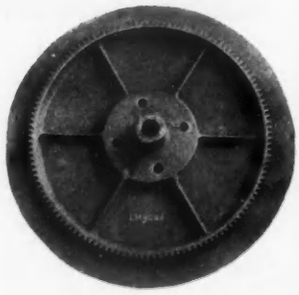
The Accurate Fit of These Parts is No Accident . . . .

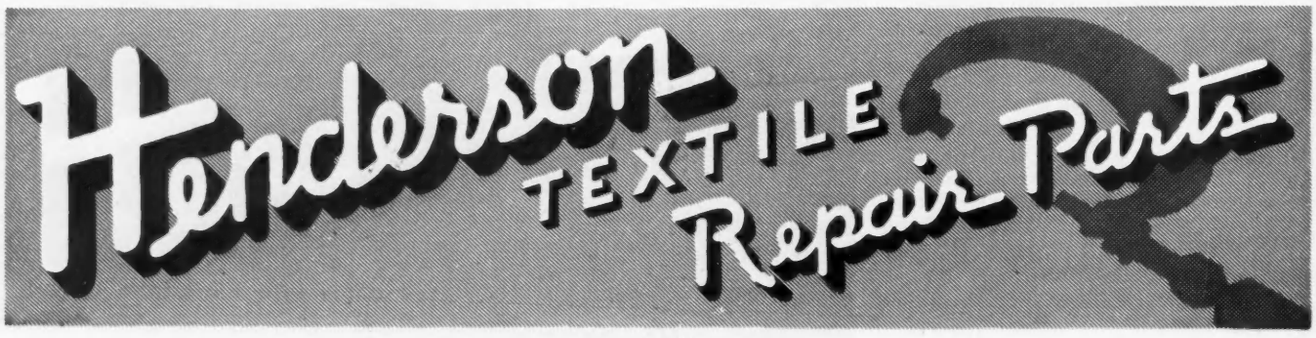
Textile machinery, old or new, can never operate with modern efficiency if its parts vibrate from imperfect fit, wear quickly or break easily.

HENDERSON Textile Repair Parts have established a reputation for precision accuracy and longer life. The accurate fit of every part doesn't "just happen"—it's due to precision patterns and careful workmanship. Their greater endurance and longer life is "no accident", either, as a scientific study of present-day textile equipment has enabled us to ascertain the parts that break most easily and the locations of the quickest wear; so that HENDERSON parts could be reinforced at these places.

Let HENDERSON help you bring your equipment up to greater efficiency, save you production time caused by frequent breakdowns, and save you money with less replacements. Quotations on one or any number of parts for any make of textile equipment gladly sent on request.

HENDERSON FOUNDRY & MACHINE WORKS
HAMPTON, GEORGIA



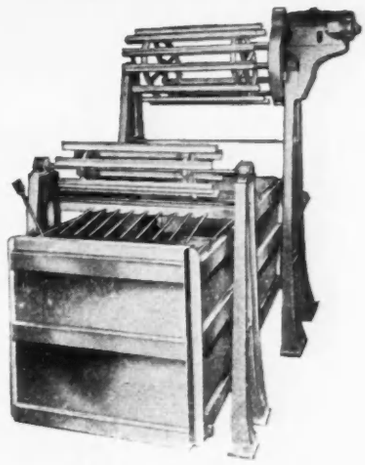


A COMPLETE DYE HOUSE SERVICE

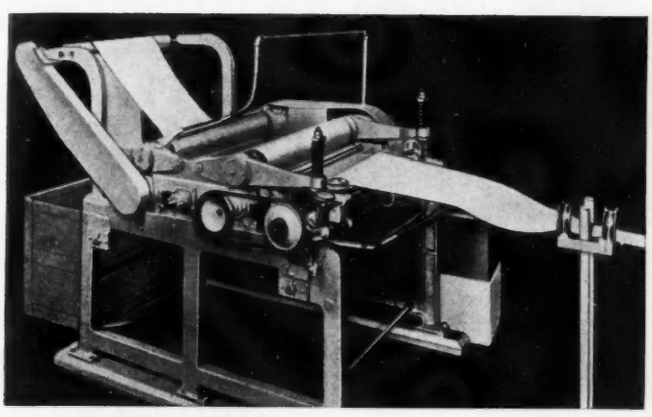
Backed by 120 Years of Experience

Everybody who dyes or finishes, particularly knit goods, has individual problems. These may be technical, or it might be a matter of greater speed and more production. Here is where our machines and our engineers fit into *your* picture — for with our line of *new ultra modern* dyeing machines, we can give you greater production and in most cases improve your dyeing results.

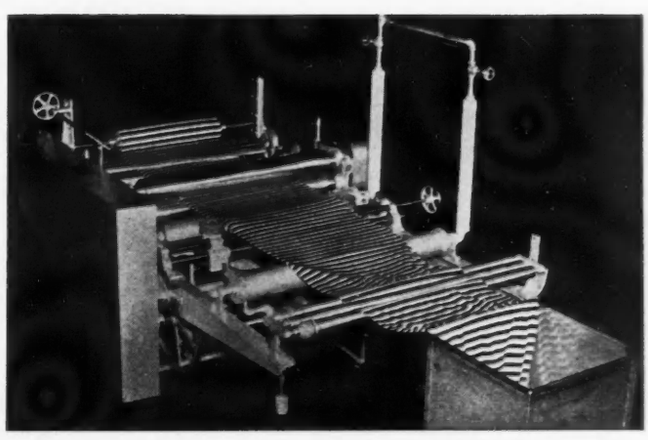
We are Tube-Tex licensees and have behind us the Tube-Tex laboratories. There is an improved Tube-Tex method for the following knit goods finishing operations — Wet Spreading, Extracting, Processing, Drying, Conditioning, Double Steaming, Winding and Measuring on individual or continuous Tube-Tex Machines.



In addition to the Dye Beck illustrated, we make deep tub round reel types. All machines can be supplied with wood tubs lined or unlined as desired.



New Tube-Tex Wet Spreading, Extracting and Processing Machine.



New Tube-Tex Steamer and Calender

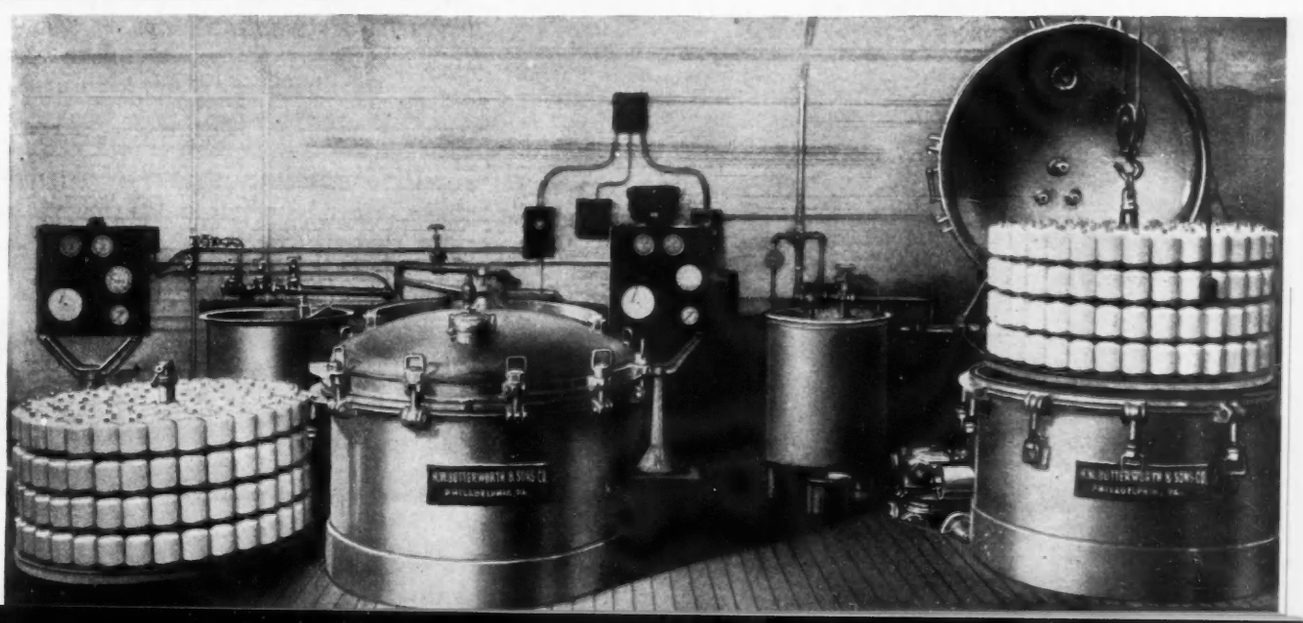
AT THE KNITTING ARTS SHOW

See our exhibit of modern dyeing and finishing machines for knit fabrics — talk with our engineers, and if you have an individual dyeing or finishing problem, let us help you solve it.

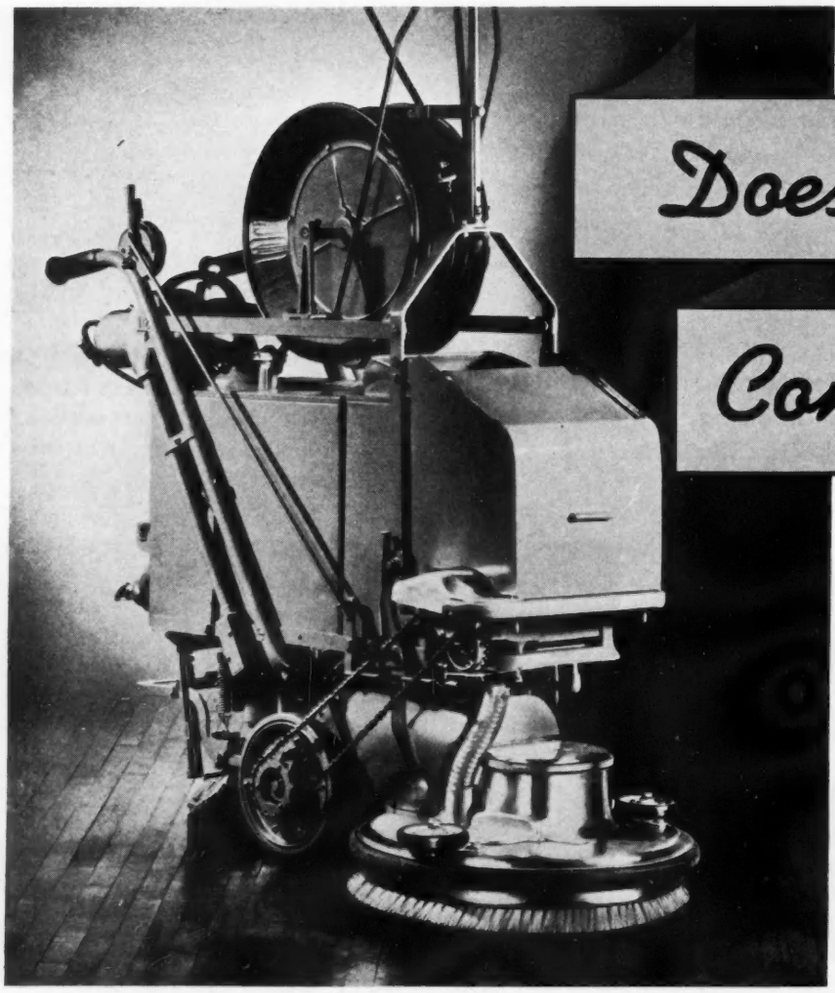
H. W. BUTTERWORTH & SONS CO.
PHILADELPHIA, PA.

Established 1820 PLANTS at PHILADELPHIA and BETHAYRES, PA.

New England Office:	Southern Office:	In Canada:
Turk's Head Bldg.	Johnston Bldg.	W. J. Westaway Co.
Providence, R. I.	Charlotte, N. C.	Hamilton, Ontario



Two 500-pound Package Dyeing Machines in the modern dye plant of the Gastonia Combed Yarn Company, Gastonia, N. C.



Does the Complete Job

- **DISTRIBUTES THE POWDER**
- **SCRUBS**
- **RINSES AND**
- **DRIES THE FLOOR**

See a Finnell in Action

. . . on your own floors. No obligation. Phone nearest Finnell branch, or write Finnell System, Inc., 1304 East Street, Elkhart, Indiana.

★

Here is a Combination *Finnell* that greatly simplifies the maintenance of textile floors. The one machine does the complete cleaning job—automatically distributes the correct amount of powder, scrubs, removes dirty water and deposits, rinses, and dries the floor.

This Combination Scrubber is compact in design to permit use in narrow spinning machine lanes and weave room alleys, and in otherwise congested areas, as well as in the larger, open spaces. Cleans the floor far more thoroughly than is possible with less modern methods . . . and with substantial savings in maintenance costs.

The *Scrubber* illustrated is just one of 43 sizes and types offered by *Finnell* for low-cost maintenance of clean, safe floors. In addition, *Finnell* offers a full line of accessories, sealers, waxes, and cleansers.

FINNELL SYSTEM, INC.

Pioneers and Specialists in FLOOR MAINTENANCE EQUIPMENT

WHEN it comes to turning orders into re-orders, you can count on a fine Teca Blend. Whether it is a smooth flannel type, a crisp worsted-like weave, or a porous open construction, there's extra value, extra satisfaction built into the very fiber.

Teca's crimp gives it these important advantages. A loftiness of hand which contributes a rich texture. A resilience which resists crushing or sagging. The insulation of countless tiny air pockets which make it comfortable in warm or cool weather.

No wonder manufacturers of dresses, suits and play clothes of every type report garments in Teca Blends among their best sellers. No wonder retailers tell us of an ever-increasing consumer interest in Teca, Eastman's crimped acetate rayon fiber.

Eastman
ACETATE RAYON

For further information consult A. M. TENNEY ASSOCIATES, 10 East 40th Street, New York City. Sales representatives for the Tennessee Eastman Corporation, Kingsport, Tennessee, subsidiary of the Eastman Kodak Company.

YOU TURN ON DAYLIGHT ANYWHERE IN YOUR PLANT— ANYTIME with HYGRADE MIRALUMES!

What are MIRALUMES?

Miralumes are complete units of Hygrade Fluorescent Light—wired—ready-to-install—without costly re-wiring.

More light per watt—without harsh glare or shadow—with only one-fourth* the radiant heat. Instantly steps up plant efficiency!

***For same amount of light.**

MIRALUMES increased foot-candles from 9 to 20, in textile plant of Paul Whitin Manufacturing Co., Northbridge, Mass.

NOTE—Extraordinary lighting efficiencies are obtained in fluorescent lamps by tuning the electric discharge to concentrate its ultraviolet energy at the precise 2537 Angstrom Unit wavelength most effective in causing the porous film (Hygrade Patent 2,096,693) to generate light. This achievement, so important to the efficiency of HYGRADE MIRALUME, is described in Patent No. 2,126,787, now controlled in this field by HYGRADE.

A NEW KIND OF DAYLIGHT—

It will literally take your breath away—the way your lighting is *modernized* by HYGRADE MIRALUMES! Overnight, you will see plant efficiency stepped up... production *increased*... accidents and fatigue *decreased!*

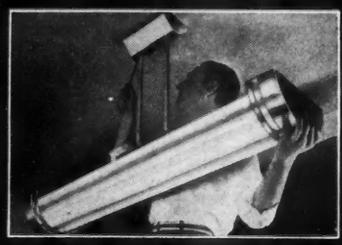
For HYGRADE MIRALUMES bring you the magic of Fluorescent Light at its finest—several times the light per watt—glare-free, shadow-free light—with 75% less radiant heat for equal light intensity.

Changing to this better lighting is simple, inexpensive, swift! HYGRADE MIRALUMES are *complete* units—wired—ready-to-install—without extensive re-wiring. Designed, engineered, built and guaranteed by HYGRADE. Corrected for power factor and stroboscopic effect (flicker).

WRITE TODAY or get in touch with your HYGRADE jobber for full information, prices, discounts on MIRALUMES. Address: Hygrade Sylvania Corp., Salem, Mass. But do it now!

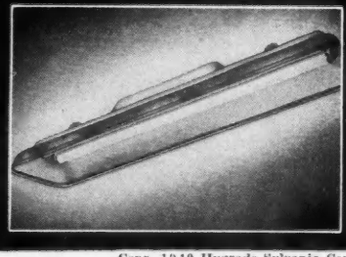
C-4

READY NOW—FOR ALL INDUSTRIES



COMMERCIAL OR INDUSTRIAL—H F-200 MIRALUME 200 watts, 4 40 watt tubes, approx. length 50 in.

INDUSTRIAL MIRALUME F-100 100 watts, 2 40-watt tubes; approximate length, 54 inches



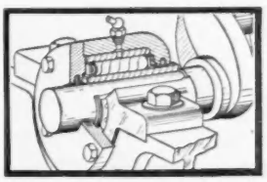
Fluorescent at its Finest—

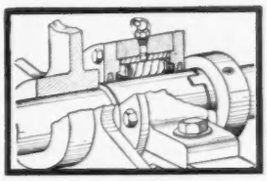
Hygrade Miralumes

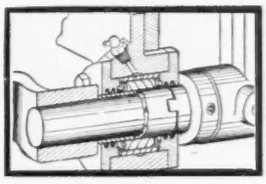
Hygrade Sylvania Corp., Est. 1901. Makers of Hygrade Incandescent Lamps and Sylvania Radio Tubes

Copr. 1940 Hygrade Sylvania Corp.

LOOMING UP BIG IN LOOMS







ON CRANKSHAFT

ON CAMSHAFT

ON ROCKERSHAFT

ON TAKE UP AND DOBBY

You'll find tens of thousands of Hyatt Roller Bearings in modern looms rolling without friction (not scrubbing like plain bearings) and as they roll in their precision ground races they save power, lubricant, repairs and help to produce more high quality, spotless cloth at low cost. Hyatt Bearings Division, General Motors Sales Corporation, Harrison, N. J.

SPECIFY MODERN HYATT ROLLER BEARINGS FOR YOUR NEW LOOMS AND YOUR LOOMS WILL BE COMPLETELY MODERN

HYATT *Roller Bearings*

Sitting Pretty

THANKS TO "AVITEX" FINER FINISHING

MAKE your fabrics lovelier to feel and to look at... easier to sell with "Avitex" finishing agents! These widely used agents give fabrics a rich softness . . . vivid, bright colors . . . and rich, full character. "Avitex" resists air-oxidation, too . . . assures you that your fabrics won't harshen, yellow or develop unpleasant odors, even after long months of storage!

Add this new beauty to your fabrics *at no increase in production costs.* There's a grade of "Avitex" made for every fabric. A Du Pont representative from our nearest office will be glad to show you how "Avitex" can help you produce superior, faster-selling merchandise. Feel free to write for additional information and technical assistance.

DU PONT
AVITEX
TEXTILE FINISHING AGENTS

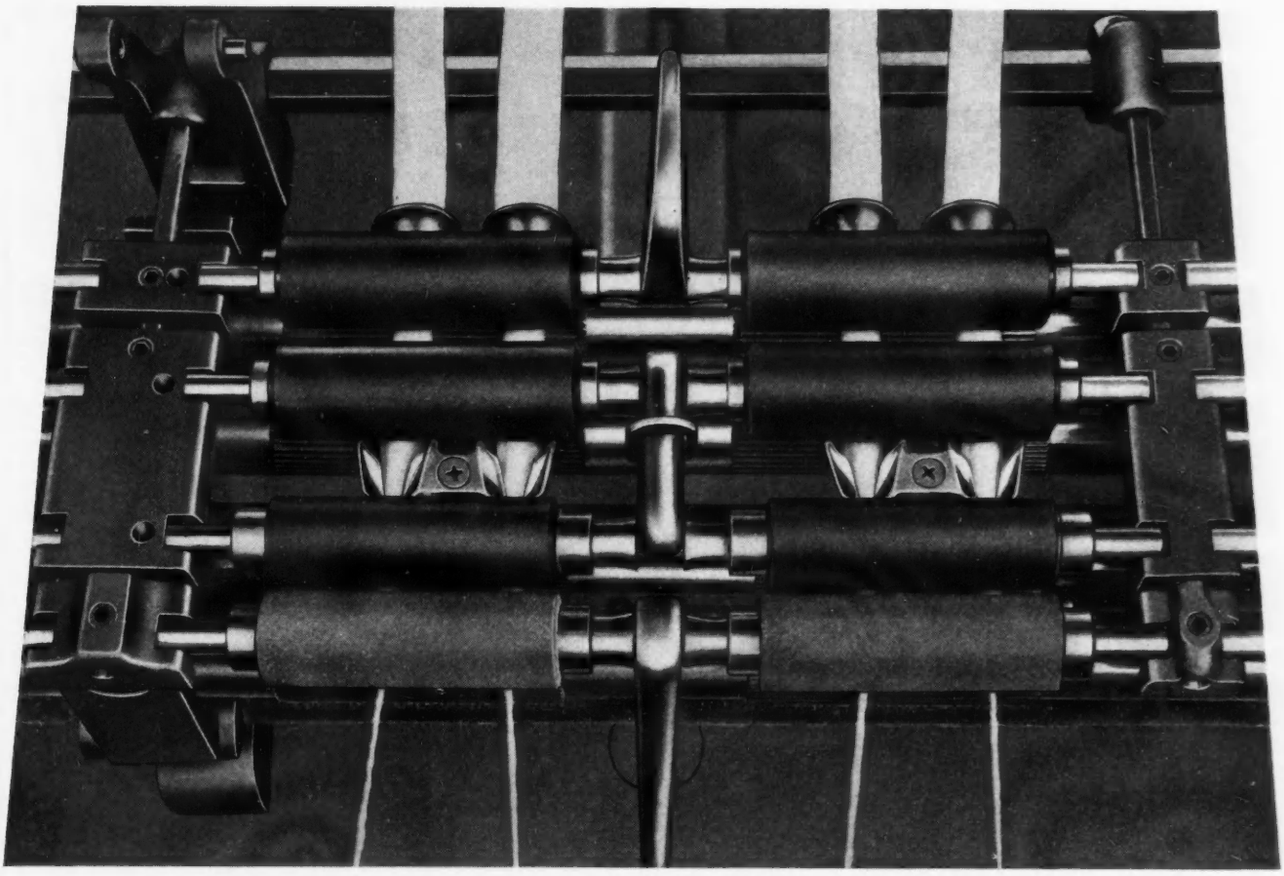
Each type of "Avitex" finishing agent is designed to meet particular requirements:
"Avitex" AD "Avitex" C "Avitex" L "Avitex" R "Avitex" SF "Avitex" VS "Avitex" W

E. I. du Pont de Nemours & Co. (Inc.)

FINE CHEMICALS DIVISION **WILMINGTON, DELAWARE**

DU PONT ON THE AIR — Listen to "The Cavalcade of America" every Tuesday, 9 p. m. E. S. T., over National Broadcasting Company networks

Sales Offices: Boston, Mass., Charlotte, N. C., Chicago, Ill., New York, N. Y., Philadelphia, Pa., Providence, R. I., & San Francisco, Calif.
Represented in Canada by Canadian Industries, Limited, Box 1260, Montreal, Quebec, and 372 Bay Street, Toronto, Ontario.

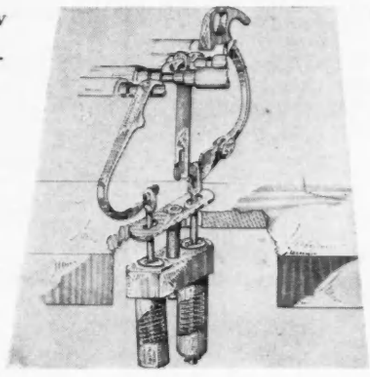


TOP VIEW of the Model J-3. Note how the Forming Trumpet gathers the wide ribbon of fibres, and transforms it into a uniform compact tubular shape just before it reaches the final drafting zone.

WITHOUT CONTINUOUSLY EFFECTIVE FIBRE CONTROL NO LONG DRAFT SYSTEM CAN BE SUCCESSFUL . . .

An assembly of precision made parts whose design does not produce continuous fibre control, is just as unsatisfactory as an assembly of poorly made parts. With either the roving will be lumpy and uneven . . . resulting in yarn of poor quality and low breaking strength . . . and with increasingly higher operating costs in the spinning room.

The Model J-3 Controlled Draft Roving Assembly consists of precision built parts which have been designed to produce continuous fibre control in every drafting zone. The result is smooth even roving, even though the drafts reach 25 or 30 with 1″ or 1½″ staple. Consequently the conventional slubber and intermediate are useless and have been successfully eliminated and replaced by a single roving process.



Thus it can be seen how the saving in power, floor space . . . and in capital and operating charges, frequently makes an installation of the Model J-3 a self-liquidating investment.

Our engineers would like to give you detailed facts showing the savings, improvements and economies which can be effected in your mill through the installation of the Model J-3.

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Contents--Second Edition

Water
Hardness in Water
Removing the Hardness
Water as a Finishing Material
Softeners
Source and Types of Tallow
Sulphonated Tallow Products
Stearic Acid Softeners
Trouble with Knives Heating
The Oil Type Softeners—Mineral Oils
The Refining Process
Combination Fatty and Mineral Oils
Paraffin
The Soap Softeners
Pure Starching and Backfilling
Softeners (Continued)
Castor Oil
Olive Oil
Cocoanut Oil
Glycerine
Glucose
Starches, Gums and Dextrines
Description of Starch
Manufacture of Corn Starch
Potato Starch
Tapioca Flour
Wheat Starch
Sago Starch
Rice Starch
Thin Boiling and Soluble Starches
Dextrines
The Application of Starches, Gums and Dextrines
Machine Construction and Speed
Boiling the Mix
Arrangements for Starching
Faults Encountered in Starching
The Process of Backfilling
Formula for Backfilled Book Cloth
Problems of Wrinkles, Water Drops, etc.
Fillers, Weighting, Hydroscopic and Antiseptic Materials
Clay
Talc
Calcium Sulphate
Magnesium Silicate
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Magnesium, Calcium and Zinc Chlorides
Glycerine
Starch
Mildew and Mildew Prevention
Tinting Materials
Ultramarine Blue—Method of Manufacture
Ultramarine and Prussian Blue—Their Characteristics and Uses
Acid Colors—for Staining
Direct Colors—for Coloring
Glues and Gelatines
Manufacture of Glue and Gelatines
Uses of Glues and Gelatines
Casein
Casein in Waterproofing
Rosins and Synthetic Resins
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Mechanical Piling of Goods
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A long felt need of practically all textile executives and supervisors is filled in this new book "My Private Secretary," just produced by COTTON. This book, compiled by F. Gordon Cobb, contains a comprehensive set of mill calculations, constants, tables, etc., for which the mill man will find constant use, but its unique and striking feature is a section of forms, so designed that, when filled in by the user, will provide, in one pocket-size volume, a complete record of a man's mill or department, so that he can readily answer practically any question about his job.

Practically all textile men have much useful information which they wish to record, but, too frequently, one memorandum is left at the desk, another is at home, others cannot be located. "My Private Secretary" was designed to provide in one handy volume all of this desirable information, along with useful rules, tables, etc. The specially prepared forms are so designed that comparable records of several plants may be recorded, or these spaces used to indicate changes from one year to the next for a single plant.

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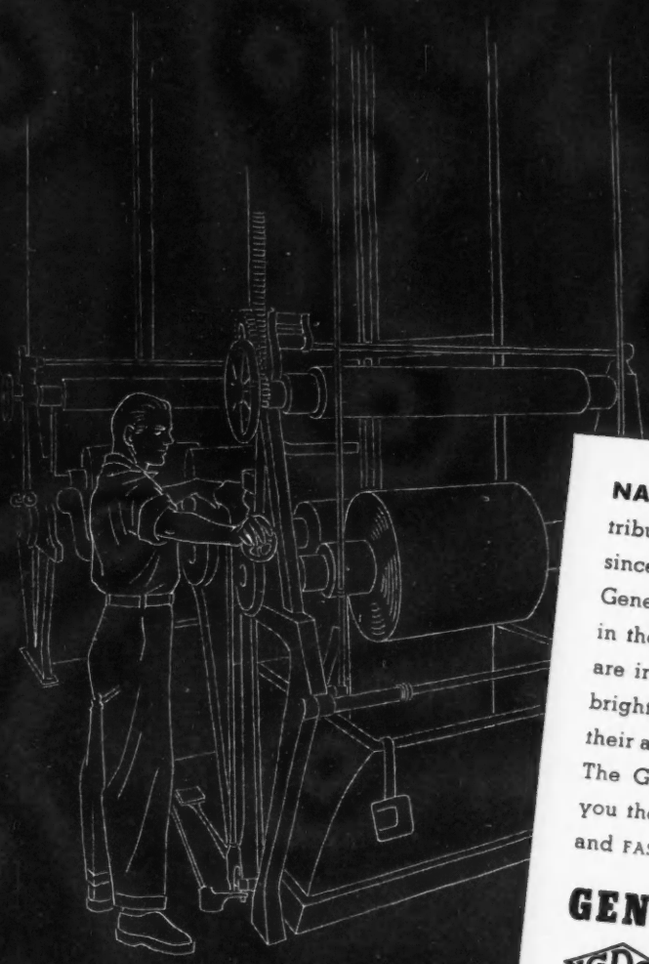

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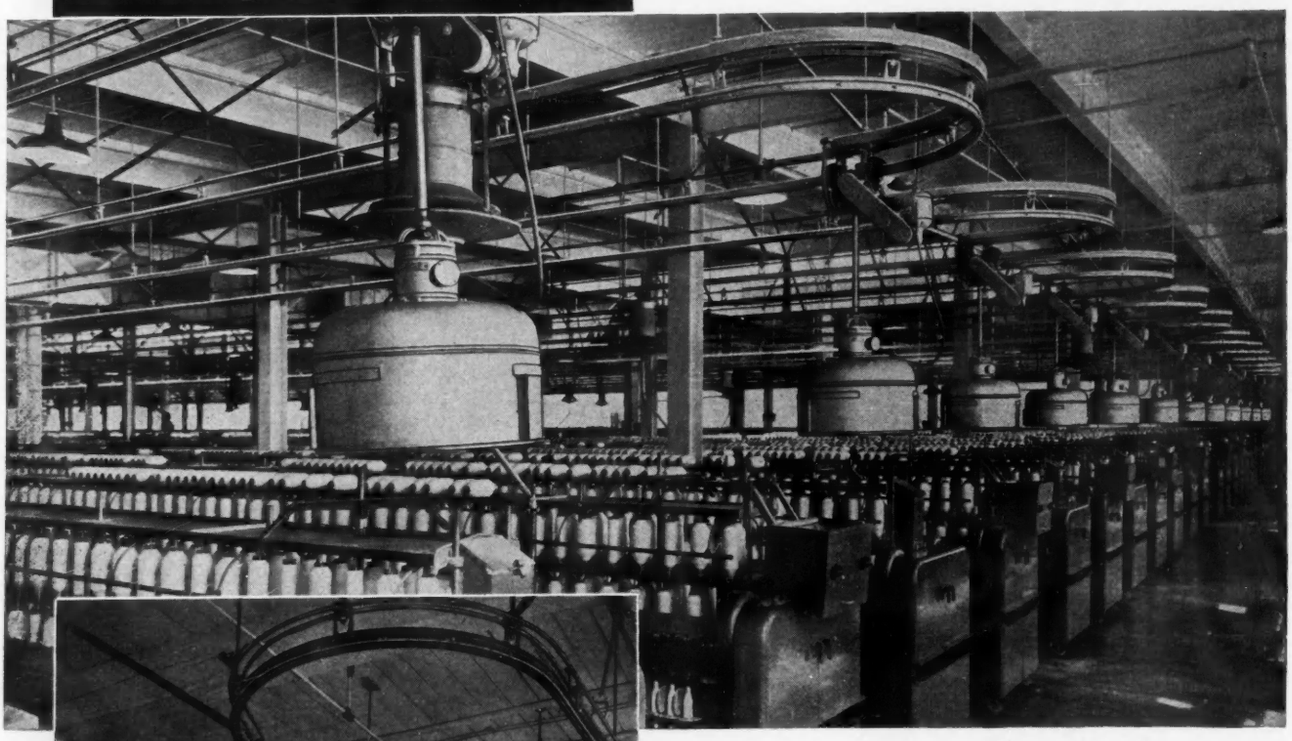

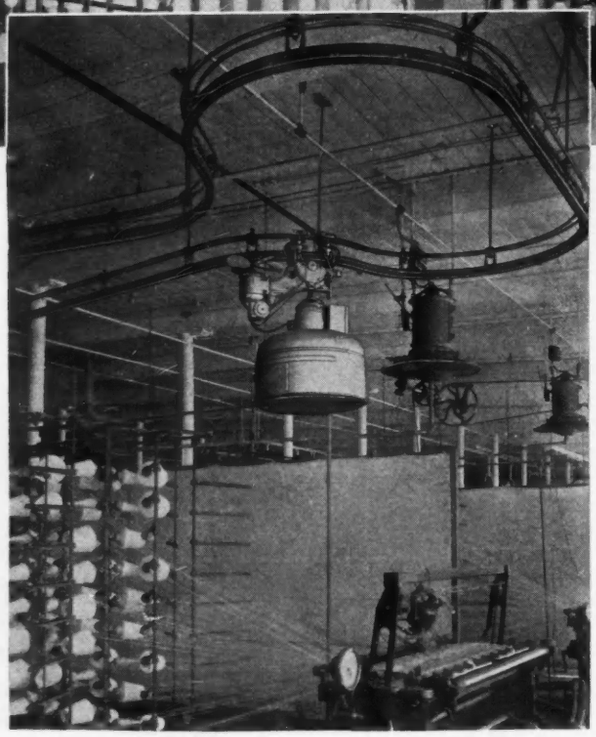

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Textile Industries

APRIL, 1940
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IN THIS ISSUE

General and Technical—

The Convention Season Opens 69
A Package Plan of Insurance to Help Our Employees, by Frazer Patterson 70
Sanforizing Volume Almost Doubled in 1939 72
Textile Training for Engineering Graduates 72
Stainless Steel—Properties, Maintenance and Fabrication for Textile Applications, by J. E. Goodavage and G. W. Hinkle (Part One) 73
Modern Inventors Receive Recognition 76
Leno Weaving (Article 1) by Ivar Moberg 77
Cloth Room Practice (Part Two), by John Dane 81
Textile Committee of Testing Society Meets in Charlotte 84
Correction of Errors in "Checking Spindle Speeds", by E. G. Field (March Issue) 85
Groups Mobilize to Support National Cotton Week 86
Preparing Warp and Filling for Duck Looms (Article Two), by John Middleton 87
Electrical Equipment Subject of Gaston County STA 91
Record Georgia Crowd Holds Fine Carding-Spinning Discussion 93

Current Textile Topics—

Talk of the Month 98
New England Mill Situation 99
"The Situation" as seen Across an Executive's Desk 100
Comment on the Cotton Market 102
What the Southern Mills are Doing 103
Culloden Improvement Award 103
New Equipment and Materials 104
Timely News Items with a Textile Slant 112
New Textile Publications 119
More Details on Plans of Research Laboratory at New Orleans 119
Personal Notes about Men You Know 122
An Old-Timer Says— 125
Shorts and Remnants 67

How Other Men Manage—

On Visiting Other Mills and Meetings 129
Washboard Shuttles: Some of the Causes 130
A "Super" Comments on Cotton Staple 131
Trumpet Sizes for Cards and Drawing 131
Foreign Matter in Cloth (Continued) 132
The Proper Picker Speeds and Settings 134
Checking Cloth Baled against Picks Earned 138

Knitting Section—

Many New Exhibits to be Seen at 36th Annual Knitting Show 143
Exhibitors at 36th Annual Knitting Show 144
We Who Work in the Dyehouse, by Harris Whitman 145
Pre-Boarding Nylon Hosiery, by Thomas S. Schermerhorn 150
An Eye on the Knitting Mills 153
Style Development Department in Seamless Hosiery Mill (Article 1), by Frank Boyd 156
Operating and Fixing Model ES Machines (Article 12) 158
Fine Goods on Banner by Changing Needles? 161
Streaks in Full-Fashioned 164
Needle Care 164
Full-Fashioned Menders 165
Sizing Full-Fashioned 165
Verge Plates 165
Adjusting the Stitch for Half-Hose 166
Picot Turns Out on Full-Fashioned 166
Questions on Banners 166
Trends and Highlights of the Knit Goods Markets 169
Trends—Yarn Markets 176

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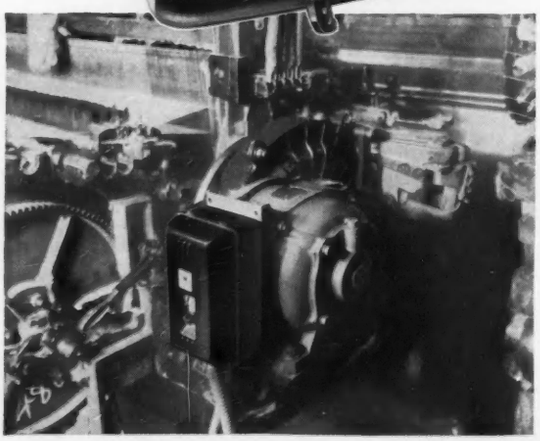
IT'S EASY TO SEE WHETHER THIS STARTER IS on-off OR tripped



New "De-ion" Switch for Motors up to 7½ hp

This new loom switch, the Westinghouse Motor Watchman, has an indicating handle on the front of the starter. It shows the operator or inspector at a glance whether the starter is tripped, on, or off. Smaller, more compact, it is easily mounted on or near the machine. Saves time . . . saves guessing . . . saves space.

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- Westinghouse "De-ion" Arc Quenchers protect contacts from flashovers . . . prolong contact life.
- Snap action bi-metal disc relay protects motor from overload. Resets to correct calibration — nothing to replace.
- Safety interlock prevents accidental contact with live parts.

For complete data, ask your nearest Westinghouse office, electrical wholesaler or industrial agent.

WESTINGHOUSE ELECTRIC & MANUFACTURING CO.
East Pittsburgh, Pa.

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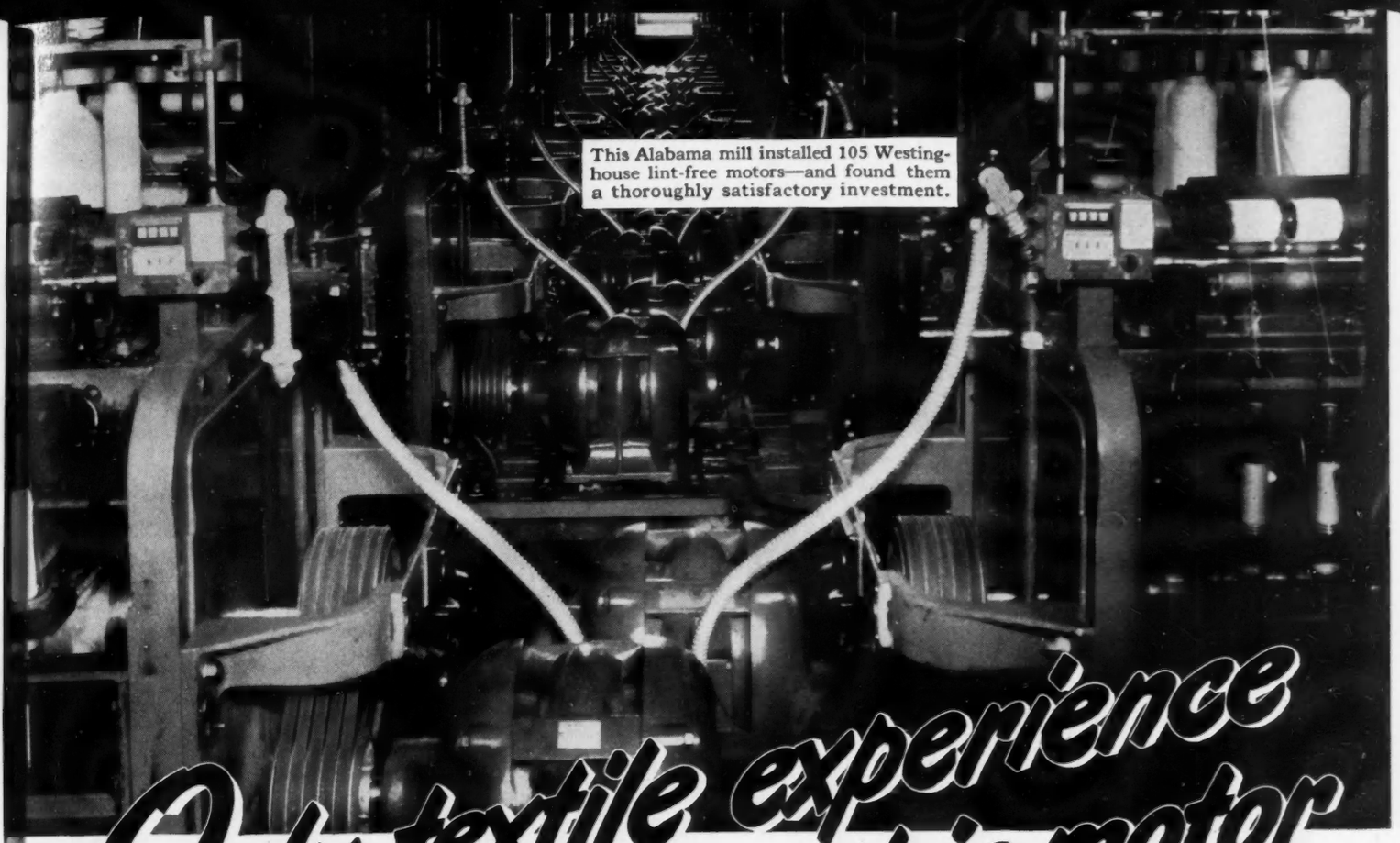
Westinghouse Loom Switch

WESTINGHOUSE ELECTRIC



This Alabama mill installed 105 Westinghouse lint-free motors—and found them a thoroughly satisfactory investment.

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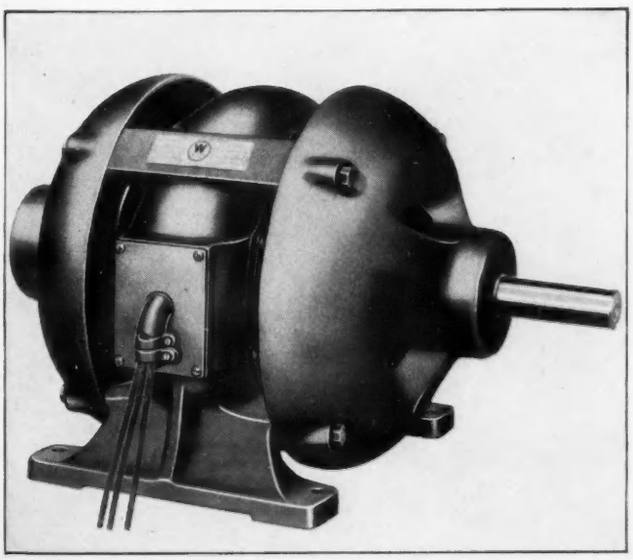

MILL OPERATORS using Westinghouse Lint-free motors have discovered for themselves that this is really a thoroughly self-cleaning motor. They have found that it helps cut costs and gives better all-around service than any motor they have ever used for spinning, weaving and finishing.

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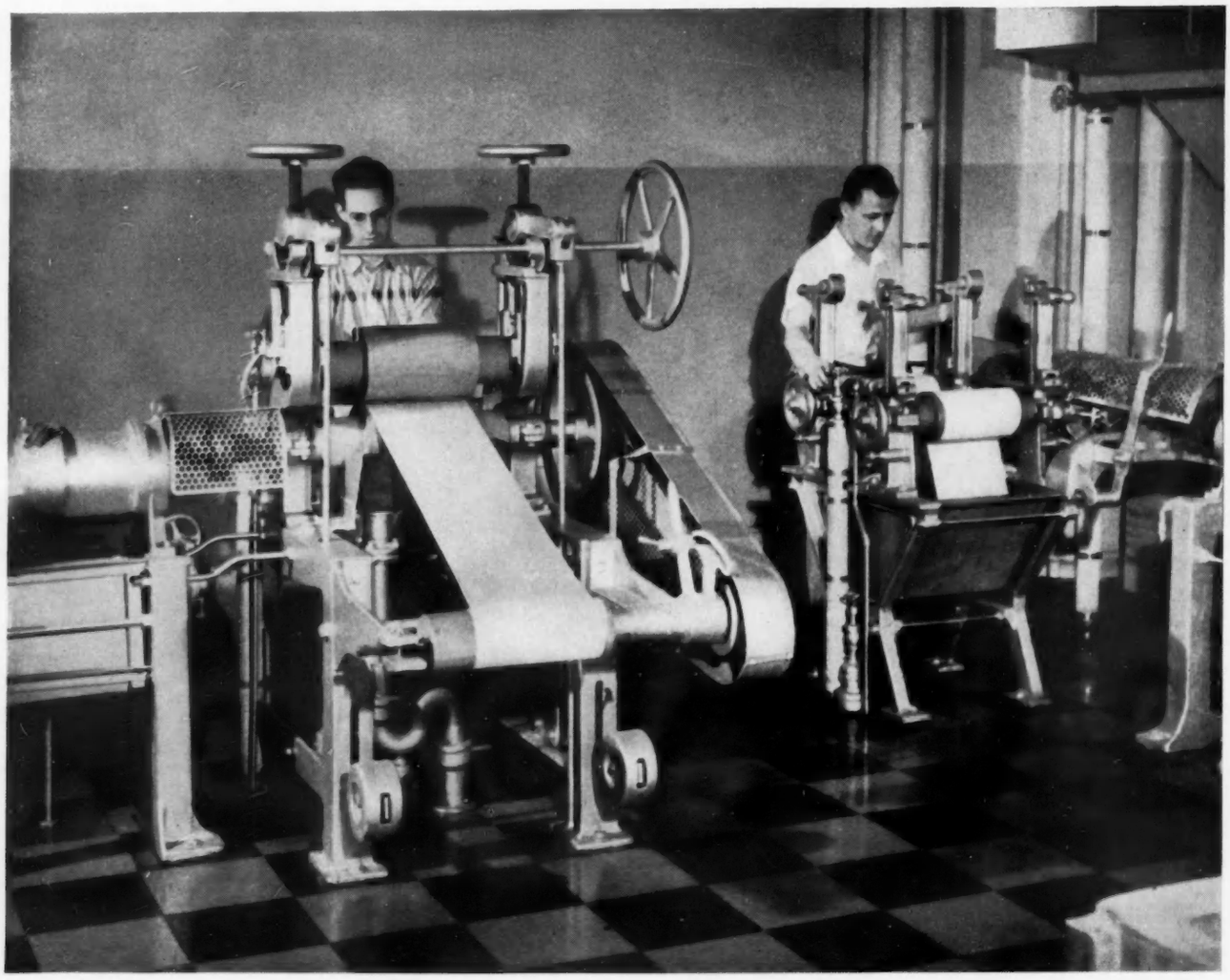

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SHORTS AND REMNANTS

Shall We Reprint?

Among many letters received concerning Mr. Pratt's series of articles on "Spinning Room Practice" just concluded in COTTON are the following:

"Our spinning overseer, Mr. Prim, says there is some interest in his room toward securing several copies of 'Spinning Room Practice', which I understand you are planning to publish in pamphlet form. Please let me hear from you."

ALLEN JONES
Superintendent,
Muscogee Manufacturing Co.,
Columbus, Ga.

"I am interested in obtaining 'Spinning Room Practice' if it is put into booklet form. Please let me know how I may go about obtaining one of these publications."

FRANKLIN D. WEAVER
Darlington Manufacturing Co.,
Darlington, S. C.

"We have read Article 8 of Mr. Pratt's write-up on 'Spinning Room Practice' appearing in the January issue with a great deal of interest and wonder whether he has already written anything in your publication on the subject of humidity control in the spinning room. If he has, we would like very much to have a copy of the issue in which it appeared."

G. P. LONERGAN
Manager, Sales Promotion Dept.,
The Bristol Company,
Waterbury, Conn.

(The foregoing are representative of the many comments we have received regarding this series. We would like to have more expressions from our readers as to whether or not the entire series should be put up into booklet form. With reference to Mr. Lonergan's inquiry, humidity is discussed in Parts 1, 2 and 7 of the article.)

◆

This One Was Easy

"I would like to get some information on Silesia-olive drab—4.4 oz. per yard—36" width—84x84. If you have any information as to counts of warp and filling or any other information on this construction I would appreciate getting it."

WALTER DANHOFF
Overseer of Carding,
Chiquola Manufacturing Co.,
Honea Path, S. C.

(While we were endeavoring to round up some information for Mr. Danhoff he wrote us as follows: "I have run across some information on Silesia which I am passing along to you. The following is the information I have been able to get on it: 84x84—36" Width, 30s warp—34s filling—3.64 yard per pound—3 harness twill.")

◆

How Other Men Manage

"Sometime ago you ran some articles in COTTON on conditioning weave rooms over the week-end. Please send me copies of these articles."

J. C. GODFREY
Overseer Weaving,
The Springs Cotton Mills,
Fort Mill, S. C.

(Mr. Godfrey has reference to the discussion on the best temperature and humidity to be maintained in the weave room over the week-end. The original question appeared in the January 1936 issue and answers appeared in the February, May, June, July and August 1936 issues.)

◆

Correction

The Maple Flooring Manufacturers Association has requested the Shorts & Remnants editor to call attention to the fact that the Mathews Cotton Mill, referred to in the association's advertisement on page 7 of the January issue of "Cotton", was incorrectly referred to as being in Greensboro, S. C., instead of Greenwood, S. C.

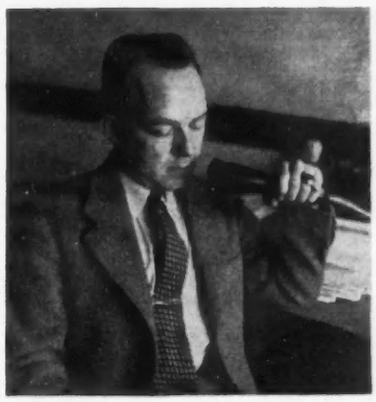
Wetter Water

"In your issue of February 1938, you had an item about chemists making 'water wetter' through petroleum by-products. Have you any information on this subject or perhaps you might be able to give me some patent numbers that are applicable to products producing these effects? . . . I find your paper one of the most interesting of the textile papers."

GEORGE R. LUCY
Everett, Mass.

(The item referred to was with reference to Tergitols written by Dr. B. G. Wilkes, and Dr. J. N. Wichert of Carbide & Carbon Chemicals Corporation. Other products developed for this same purpose include Decerosol by American Cyanamid Chemical Co., of New York City, and Myrpentine by Organic Chemicals Div., E. I. DU PONT DE Nemours and Company, Wilmington, Del.)

Meet "Cotton's" Staff (No. 3)



Richard P. Smith, advertising manager of "Cotton", has been associated with the W. R. C. Smith Publishing Company, which his father founded, since his graduation from Virginia Military Institute in 1934. He started in the subscription department, later acquiring experience in the sales promotion, advertising and executive divisions, and as assistant to W. J. Rooke, then actively in charge of "Cotton", and later taking over the full responsibility.

Among his responsibilities are the direction of the field advertising representatives of the publication, and its general advertising policy—in other words, "Getting the business", and serving in every way an ever-widening clientele. He supervises the preparation of market surveys and analyses, and produces the regular Construction News Service for "Cotton's" advertisers.

Dick finds relaxation in golf, hunting, fishing—in fact, in all of the manly sports. Still a newlywed, having been married in November 1939.

Request for Reprints

"In your April 1939 issue you published an article by Arthur J. Cobert about press-offs, their causes in relation to carrier tubes. We would like to have a few copies of this issue, or if not available, reprints."

ERNEST A. FEUSTEL
Ernest A. Feustel, Inc.
Hasbrouck Heights, N. J.

(Mr. Feustel subsequently ordered and has received 1,000 reprints of this article.)

◆

Loom Fixing

"Please send me the address of the company that puts out books on loom fixing."

EDWIN HARPER
Meridian, Miss.

(Mr. Harper accidentally came to the right place the first time for we have available a book "Methods of Fixing Looms" by B. H. Hawkins which is composed of material originally appearing in COTTON. The book may be secured in connection with a subscription to COTTON or may be bought separately for $1.00 per copy.)

◆

Systematically Inspecting Looms

"I have been thinking about putting in a system of systematically inspecting looms, and wondering if you know of any articles on this, if so, if you could send me copies of them."

JAMES A. CHAPMAN, JR.
President,
Inman Mills,
Inman, S. C.

(The OLD-TIMER article, "It is so Easy to Run a Cotton Mill", in the January 1936 issue of COTTON describes a system of loom inspection on day and night shifts which is as applicable today as it was four years ago. Clippings of this article are available on request.)

◆

Portable Hand Pump

"If I remember correctly, sometime ago I saw an advertisement in COTTON of a small portable hand or electric operated vacuum pump or syphon for draining the oil from the spinning frame spindle bolsters. I am interested in securing one of these syphons, and would appreciate it very much if you could give the name of the manufacturer."

H. H. ROBBINS
Assistant Superintendent
Compania Textilera Ariguanabo, S.A.
Bauta, Cuba

(The pump to which Mr. Robbins refers was described by Mr. W. R. Beldon, Clark Thread Company, in the February 1939 issue. The device described is home-made and is not commercially available. The most generally used device for this purpose is a McDaniel suction tee, which is manufactured by the Grinnell Company, Inc., Providence, R. I.)

◆

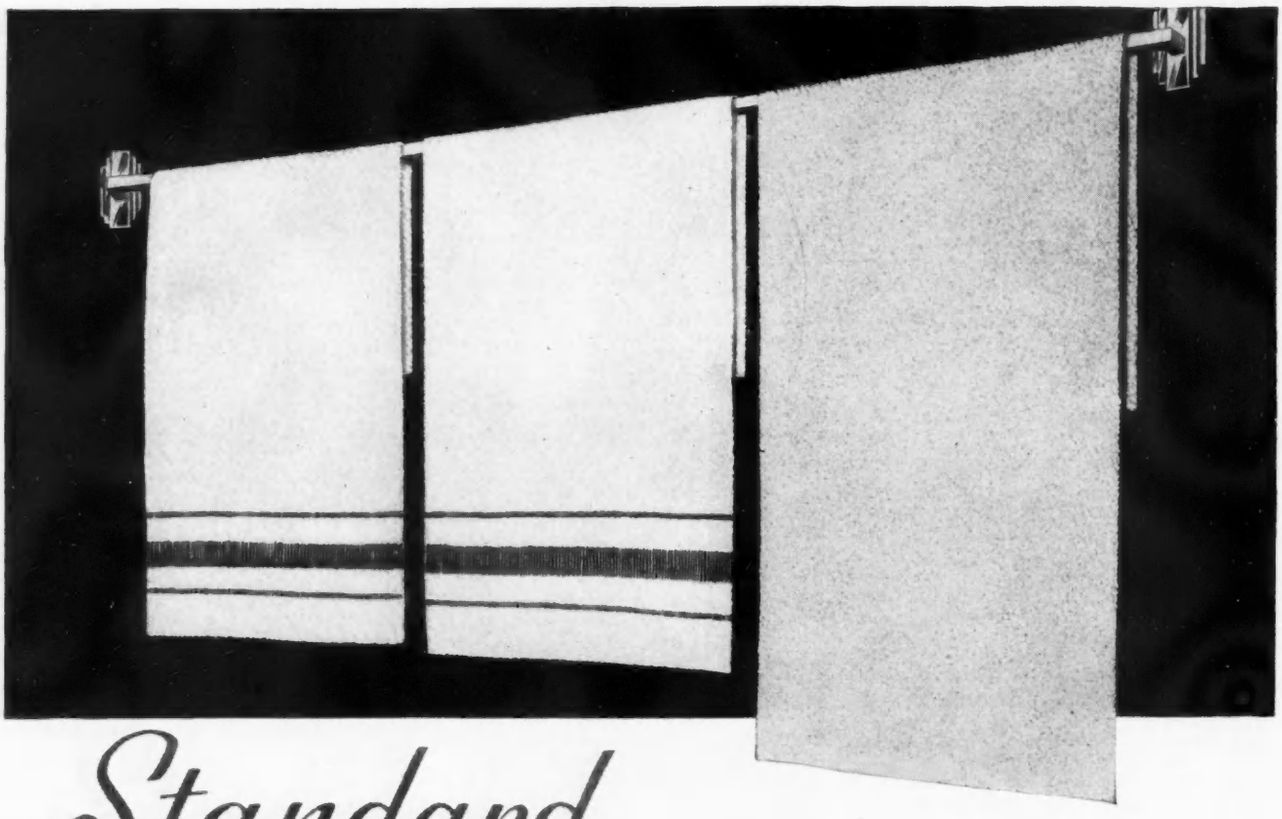
Leno Weaving and Designing

"Please send us four copies of the Leno Weaving and Designing booklet reprinted from the May, July, August and September 1932 numbers of COTTON."

L. R. BURGESS
The Burlington Corporation
New York, N. Y.

(Reprints of the articles on Leno Weaving and Designing by Professor Nelson are available at a cost of 60c each.)

DO YOUR PRODUCTS SUFFER BY COMPARISON



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Vol. 104 April 1940 No. 4

The Convention Season Opens

Details of American Cotton Manufacturers Association meeting at White Sulphur Springs, and other convention dates

AN ATTRACTIVE setting, at White Sulphur Springs; a constructive program; and an increasing interest in industry affairs will combine to make the annual convention of the American Cotton Manufacturers Association an especially outstanding event.

The convention will be held on April 25, 26, and 27, at the Greenbrier Hotel, White Sulphur Springs, W. Va. Kemp P. Lewis, president and treasurer, The Erwin Cotton Mills Co., Durham, N. C., is president of the association, and will preside at its sessions. W. M. McLaurine, of Charlotte, is secretary-treasurer. Robert West, recently resigned as president and treasurer of Riverside & Dan River Cotton Mills, Danville, Va., has been first vice-president of the association, and Fred W. Symmes, of Greenville, S. C., president of Union-Buffalo Mills Company and other textile enterprises, has served as second vice-president during the past year.

The activities at the White Sulphur Springs convention will open with a meeting of the officers and board of government on Thursday, April 25, at 11:00 A. M., concluding with a luncheon. There is no other activity scheduled for Thursday, the afternoon and evening of which will be devoted to arrivals and reunions of members.

Friday morning, April 26, the main session of the convention will be held, under the direction of President Lewis. The theme of the convention, around which the leading addresses will be presented, is "A Constructive Program for American Business". After

Mr. Lewis

Mr. McLaurine

routine matters and the report of the secretary-treasurer, President Lewis will present his annual report. One of the two guest speakers—both of national importance—will be Robert M. Hanes, of Winston-Salem, president of Wachovia Bank & Trust Company, and president of the American Bankers' Association, whose address will follow that of Mr. Lewis. Mr. Hanes' remarks will be followed by an address by Virgil Jordan, president of the National Industrial Conference Board. Each of these men commands nation-wide attention for their influence and their views, and will bring the textile convention, which will attract presidents and other administrative heads of cotton-textile plants from all over the South, thoughts of pertinence and value pertaining to the theme of the meeting.

Friday afternoon will be devoted to entertainment, with special arrangements to be provided for the ladies in attendance, and a golf tournament and skeet tournament will be under the direction of James D. Sandridge, of Charlotte, and appropriate prizes will be awarded in both contests.

The annual banquet of the association will be held on Friday evening, with President Lewis as toastmaster. There will be no speeches, the program consisting of entertainment, music and dancing.

On Saturday morning, the final session of the convention will be held, which will include reports of committees, and a talk by Dr. Robert E. Rose, director of the technical laboratory of the organic chemicals division of E. I. du Pont de Nemours & Company, who will tell of the work of The Textile Foundation, of whose advisory committee he is a member. Adoption of resolutions and election of officers for the coming year will conclude this final session.

OTHER TEXTILE CONVENTIONS

National convention of Phi Psi textile fraternity, Bellevue-Stratford Hotel, Philadelphia, Pa., April 11-13.

South Carolina Carders and Spinners Division of Southern Textile Association (place to be named), April 13.

Knitting Arts Exhibition and annual convention of National Association of Hosiery Manufacturers and Underwear Institute, Commercial Museum, Philadelphia, Pa., April 15-18.

South Carolina Weavers Division of Southern Textile Association, Drayton Mills clubhouse, Spartanburg, S. C., April 20.

Eastern Carolina Division of Southern Textile Association (place to be named) April 27.

Northern North Carolina-Virginia Division of Southern Textile Association (place to be named), May 11.

Southeastern Section, American Association of Textile Chemists and Colorists, Columbus, Ga., May 11.

Cotton Manufacturers Association of Georgia, annual convention, Sea Island, May 16-17.

A Package Plan of Insurance to Help Our Employees

By Frazer Patterson*

IF SOME member of our family had to go to the hospital tonight for an appendicitis operation, where would we get the money to pay the hospital and the doctor? Yes, we may be able to draw a check for it, but what about the men and women in our mills? Where will they get the money to pay for an operation on themselves—on their dependents? Borrow it at 3 per cent per month from some "Loan Shark"? Put the operation off with all the danger that entails? Or muffle their pride and go to the hospital on charity?

What are we going to live on if we get sick, or have an accident and can't work? Our salary may continue, but what about the men and women in our plant? What are they going to live on? Borrowed money? Sponge off of relatives who are financially unable to help? Call on charity? Or get thrown out of their homes for failure to pay rent?

Who is going to pay for our funeral expenses? We probably have provided for them, but what about our employees? They, too, need money to pay for funeral expenses. It's expensive to live, but it's also expensive to die!

To help our employees solve these problems, we looked for a plan. We wanted a plan that would provide protection for the four things mentioned above:—first, money to pay for operations on themselves; second, money to pay for operations on their dependents; third, money to provide them with food in case of sickness or accidents; fourth, money to take care of their last expenses.

We studied the plans that many different insurance companies had to offer, and let me say, they have a lot of different kinds of plans. We analyzed about 50 of them. The Provident Life and Accident Insurance Company of Chattanooga, Tennessee, finally built us a plan that we thought would help our employees solve these four problems. I say "built us a plan". I mean we worked out a plan together to suit our own individual needs, for we wanted to take care of the four problems stated, and at the same time not raise the premium above the point which our employees could pay, for there is a maximum which they can and will pay, and we had to keep our benefits in line with this maximum premium.

A Four-Way Plan

Our plan of insurance is this:

On the Insured Employee: A small death benefit, and $5.00 a week sickness and accident insurance (Limit 13 weeks).

On Insured Employee and his Dependents: $2.50 a day hospital room and board (limit 21 days); $50.00 Class A Operations (one of the most frequent operations under this class is the appendicitis); $25.00 Class B Operations (one of the most frequent operations under this class is for hemorrhoids); $10.00 Class C Operations (one of the most frequent operations under this class is removal of tonsils.)

This plan of insurance was installed at the Eagle & Phenix Mills in June, 1939, and about 1,000 employees voluntarily took it. It was installed at the Columbus Manufacturing Co. in September, 1939, and about 800 employees took it. In October, 1939, it was offered to the employees at the Bradley Manufacturing Company and 315 took this protection. It was also installed at our other companies.

The first benefit under our policy is Life Insurance. This covers death from any cause—on the insured employee only. The first claim that we had under this was on a woman 45 years old. She turned the insurance down, but her second hand talked to her and she decided to take it. Soon after the policy was in force, she left work one afternoon feeling fine, but she became ill about 6:00 o'clock and died that night. The death claim was paid the following day. The husband said that he didn't know what he would have done without this insurance, for she didn't have any other insurance to pay her funeral expenses. We had five death claims under this insurance during the first 15 weeks that it was in effect at the Eagle & Phenix Mills, one at the Columbus Mfg. Co., and one at the Bradley Mfg. Co.

The second benefit under our policy is the weekly sick and accident benefit. If an insured employee is disabled by sickness or accident, the Insurance Company will pay him $5.00 a week for 13 weeks, which is longer than the average length of disability. Payments begin the first day on accidents, and the eighth day in sickness. Accidents on the job are covered under Workmen's Compensation Insurance, and therefore, are not covered by our group insurance. $5.00 a week may look small to you, but $5.00 to a man without any money means at least a little food for himself and his family. Some have told me that they didn't know what they would do without it. On about 900 insured employees, we had 70 claims in the first 20 weeks at the Eagle & Phenix Mills. Most of these claims were paid each week for several weeks—several of them for as long as 13 weeks. We have, on

*Mr. Patterson is manager of the employment insurance department of Eagle & Phenix Mills, Columbus Mfg. Co., and Bradley Mfg. Co., et al., of Columbus, Ga.

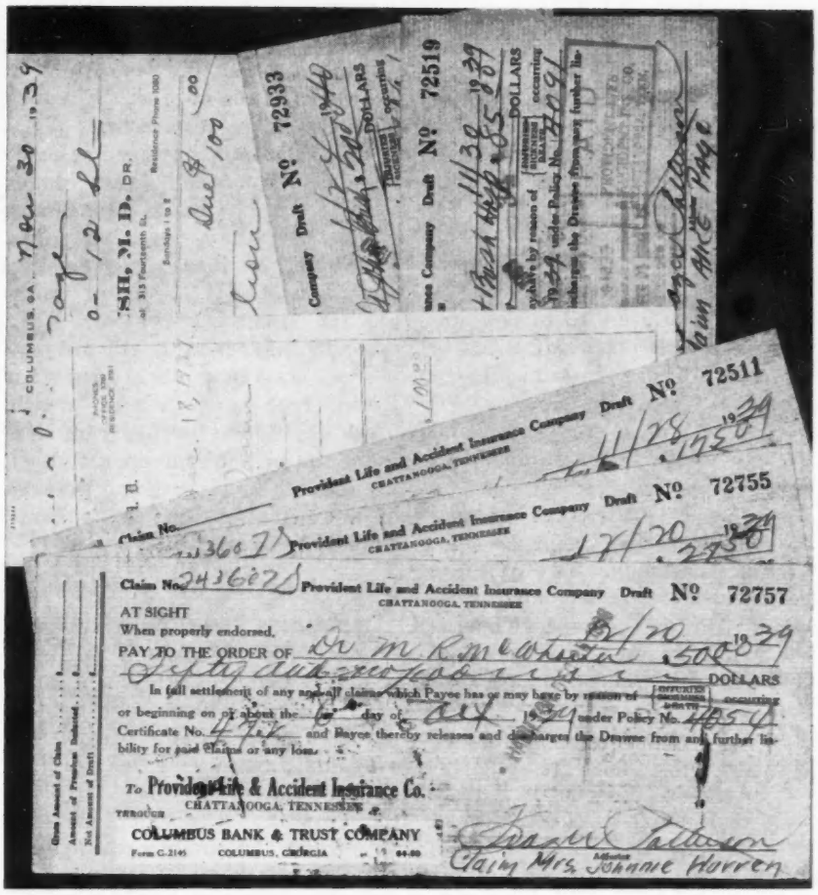
the average, about 10 or 15 claims for disability each week at the Eagle & Phenix Mills.

An employee broke his leg and was out for 13 weeks. An employee had a heart attack and was out seven weeks. An employee with an infected leg was out six weeks. Another employee was out seven weeks with high blood pressure. Another sprained an ankle and was out four weeks. Another had ulcers on his leg and was out 13 weeks. An employee with cold and influenza was out for three weeks. A number of claims have been paid for cold and influenza during January and February. These are only a few of the claims that have been paid. The $5.00 a week disability benefit is paid to each insured employee for the length of time he is out, up to 13 weeks, beginning with the first day if disability is caused by accident, and beginning with the eighth day if disability is the result of sickness.

In case of childbirth, on insured women, six weeks' disability benefit is paid at the time the child is born. In addition to this, if the insured woman goes to the hospital, she is paid $2.50 a day up to 14 days. The dependent wife of an insured employee gets only the $2.50 a day, up to 14 days, if she goes to the hospital. Naturally, we have had a number of claims in regard to this.

The third benefit under our group policy covers hospitalization and operations on the insured employee *and also his dependents.* A dependent is described as one who is permanently residing with and wholly dependent upon the insured for maintenance and support—including father, mother, husband or wife, children (all any age) or brothers or sisters not over 18 years of age. Now this is really covering a lot of dependents, especially when it is estimated that mill employees will have three dependents each. We have over 2,500 people insured in our different mills and other companies, and when you add to this 7,500 dependents, that makes a total of 10,000 people covered for hospital and operation benefits, and that's a lot of folks!

Of course, you can buy hospitalization insurance that covers only the insured and not his dependents. But we felt that our employees needed and wanted hospitalization on their dependents as well as on themselves.


Provident Life and Accident Insurance Company Draft No. 72511
CHATTANOOGA, TENNESSEE
Provident Life and Accident Insurance Company Draft No. 72755
CHATTANOOGA, TENNESSEE
Claim No. 243627 Provident Life and Accident Insurance Company Draft No. 72757
CHATTANOOGA, TENNESSEE
AT SIGHT
When properly endorsed,
PAY TO THE ORDER OF
DOLLARS
To Provident Life & Accident Insurance Co.
CHATTANOOGA, TENNESSEE
COLUMBUS BANK & TRUST COMPANY
COLUMBUS, GEORGIA
Claim Mrs. Johnnie Horren

Receipted hospital and physicians' bills are a welcome part of a properly executed insurance program

If the insured or any one of his dependents has to go to the hospital, his policy will pay up to $2.50 a day for room and board at the hospital for a limit of 21 days, which is longer than most people stay in the hospital. Now, if any one of these insureds or his dependents has an operation, the policy pays the following allowances for additional expenses in connection with the operation: *Class A Operations*—$50.00; *Class B Operations*—$25.00; *Class C Operations*—$10.00. The amount paid may not cover the whole cost of the operation but it will take the "sting" out of it—at least for the mill operative.

Class A Operations: One of the first claims under this insurance was for an operation on a negro woman. She had a cataract on her eye and was going blind. Of course, she had the cataract before the insurance went into force and was thinking of borrowing the money to have the operation, but the insurance program went into effect before this was necessary and the operation was covered under the insurance benefits. The insurance paid her hospital room and board and $50.00 on the operation, and then paid her disability for several weeks.

The second claim was on the daughter of a man who had at first refused the insurance. His daughter was operated on for appendicitis the second day his insurance was in effect, and the insurance paid hospital room and board and $50.00 on the operation.

We've had 25 appendix operations during the first 30 weeks at the Eagle & Phenix Mills. The average amount paid by insurance on appendix operations is $75.00, plus about seven weeks' disability if it is on an insured employee.

On the first hernia operation paid for under this policy, the insured employee was in the hospital for 21 days. The amounts

paid were $52.50 for hospital room and board and $50.00 on the operation; also, $30.00 for six weeks' disability was paid—or a total of $132.50. The insurance company has paid for ten hernia operations since the insurance has been in force.

Our employees have had 32 Class A Operations at the Eagle & Phenix in 30 weeks, 12 at the Columbus Mfg. Co. in 18 weeks, and seven at the Bradley Mfg. Co. in 20 weeks. There are many types of operations covered under Class A other than those mentioned, and we have paid for a number of them.

Class B Operations: The most frequent operation under Class B is for hemorrhoids. Two of these operations were on dependent husbands. This is the type of operation which removes the physical condition which may be the cause of dependency.

Class C Operations: The tonsil operation is the most frequent operation under this class. At the Eagle & Phenix, we have had 26 operations in 30 weeks for which claims were paid under this insurance. Also covered under Class C is the reduction and setting of simple fractures, and other small cutting operations not included under Classes A and B. At the Eagle & Phenix we have paid for a total of 38 cutting operations in 30 weeks, and at the Columbus Mfg. Co., 29 in 18 weeks.

This insurance has been in force in some of our companies longer than in others. In all of the companies, there have been 293 claims on which the insurance company has paid $11,641.91—as of January 12, 1940. How else, than through insurance, could our employees save that much money for these four emergencies—death, disability due to accident or sickness, the cost of an operation on the insured employee, and the cost of an operation on the insured employee's dependents?

What Does It Cost?

What does it cost our companies to make this insurance available to our employees? It costs them only the willingness to make the necessary premium deductions over the payroll and the work required to do this. But it is by doing this that the employees are able to buy so much insurance for a premium they can pay. But what does the company get out of it? It gets the good will of its employees. They feel that the company is interested in them and their families, and they, in turn, are more interested in the company. Also, through this insurance we expect to have a more healthy, efficient group of employees, because they are able to get the operations that they need.

What does this insurance mean to our employees? It means that the man who has been walking around with a pain in his side for so long can get that appendix removed and he will feel better and be a better employee. It means that the man who looks "down in the dumps" all the time can have the operation performed on his wife that she needs to make her well. It eliminates some of the fear of "What would I do if I had to go to the hospital?" or "What would I do if one of my dependents had to go to the hospital?" or "What am I going to do if I get sick or have an accident and can't work and my pay check stops?". They have frankly told us they didn't know what they would do without it.

This package plan of insurance, including life, accident, health, and hospitalization on insured and dependents, means a lot to the men and women who work in our mills, and to their dependents also. We have seen what it will do for our people.

Sanforizing Volume Almost Doubled in 1939

A Dow Jones report on Cluett, Peabody & Co., who control the Sanforizing process of shrinking cotton fabrics, reveals that last year (1939) the total yardage of goods processed by Sanforizing totaled about 920,000,000 yards, compared with 550,000,000 yards in 1938, and 130,000,000 yards in 1934. Mills using the Sanforizing process pay Cluett, Peabody & Co. ¼-cent a yard in royalties, and income from this source has been an increasingly larger share of the company's profit, amounting in 1939 to over 50 per cent of total earnings which were $3,058,200.

The report further states that Cluett, Peabody & Co. "is currently understood to be successfully concluding experiments making possible the application of the Sanforizing process to viscose rayon. Rayon, unlike cotton fabrics, stretches as well as shrinks, but Cluett has successfully solved the problem of preventing shrinkage and is now developing processes to prevent stretching. As upwards of 50 per cent of apparel is now manufactured from rayon and the market is continually expanding due to the gyrations in silk prices, the new process would become an important branch of the company's activities."

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Textile Training for Engineering Graduates

The directors of the Textile Foundation have authorized a special survey and brief report of the possibilities of providing for graduates of engineering schools and colleges who have not been previously associated with the textile industry, a year of training for the textile industry. It is proposed that the report will summarize the facts with regard to the needs of such a textile industry preparatory training. The original report on the training of men for the textile industry indicated the possibility of developing a textile industrial preparatory course, which might be given in one or more textile schools to those men who have graduated at colleges or universities where textile instruction was not available.

The proposed survey will include an inquiry into the possible number of persons desiring such training and suggestions as to the best form that such a training may take. The proposal does not contemplate a post-graduate year in the ordinary sense, but rather an organized vocational guidance course for young men desiring to enter the textile industry, but who are not acquainted with its general organization and production and sales practices. The inquiry is in charge of Thomas R. Taylor, a graduate engineer and economist, of Washington, D. C., and will be conducted in cooperation with leaders of the textile industry and of textile education as has been the case in other surveys undertaken in the field of education by the Foundation. Frederick M. Feiker, dean of the School of Engineering of George Washington University, and educational consultant for the Textile Foundation, will cooperate with Mr. Taylor in the development of the special report.

Stainless Steel—

Properties, Maintenance and Fabrication for Textile Applications

By J. E. Goodavage and G. W. Hinkle*

Arc welding similar to this is largely utilized in fabrication of textile equipment from stainless steel. . . .

• This is the first of a two-part article, discussing in detail the properties of stainless steel, its maintenance, and the processes involved in fabricating it for textile equipment. The second installment, to complete the discussion, will appear in an early number . . . . . .

PROBABLY no other industry is so critical in its selection of metals for fabrication into processing equipment as the textile industry. This is especially true of that branch of the industry where textiles are subjected to processing in the wet state and where the proper selection of metal equipment has an important bearing on the quality of the finished product.

While a use can be found in textile processing for any of the commercial metals, the extent to which any single metal or alloy is used, is determined by its physical properties and corrosion resistance. An ideal metal for general textile processing would be one that is resistant to any of the solutions to which the two major classes of textiles—the animal and vegetable—might be subjected. In addition, it should be readily fabricated into the various forms required in the construction of processing equipment. In the search for a metal suitable for general textile work, stainless steel represents one of metallurgy's latest contributions to the textile industry.

Stainless steel is á comparatively new metal (alloy), being introduced into this country shortly after the World War, and its corrosion resisting properties have made it one of the outstanding developments in the history of metallurgy. The term "stainless steel" was coined in England, where one of the first applications of these alloys was in the manufacture of cutlery. While this type of alloy, containing 12 to 14 per cent chromium, is sufficiently resistant to various corrosive fruit juices and other articles of food, it is not suitable for textile work. By increasing the chromium content to about 18 per cent and adding nickel to the extent of 8 per cent, the corrosion resistance is considerably increased and physical properties are imparted, enabling the resulting alloy to be fabricated in various forms. This type of alloy is known as 18-8-S, a typical analysis of which follows: Carbon, .08 per cent max., chromium 18.0-20.0 per cent, nickel 8.0-10.0 per cent, silicon .75 per cent max., manganese 1.25 per cent max., sulphur .03 per cent max., and phosphorus .03 per cent max. Iron constitutes the remainder.

By adding 2.00-4.00 per cent molybdenum to the foregoing analysis, another alloy, having increased resistance to acids is obtained.

The characteristics that distinguish the stainless steel alloys are: High corrosion resistance, freedom from atmospheric oxidation, harder surface, high tensile strength, cleanliness of surface, and non-catalytic to bleaching solutions.

Due to these qualities, processing time is cut to a minimum. This is readily apparent on examining the part the stainless alloys play in the processing of wool or worsted fabrics used for women's wear, where the fabrics are of comparatively light construction and are dyed with light or bright colors.

With equipment made of the proper type of stainless alloy, defects such as torn places in fabrics, "off-shades" from color absorption from previous dyeings are practically eliminated, with consequent savings through elimination of "boiling out", and it is even possible for the dye bath to remain in contact with the metal over night without any fear of metal contamination.

Where hydrosulphites are used in an acid bath in stripping dyed material, stainless alloys remain perfectly clean and present no hazards of sulphide formation. Another outstanding property of the stainless alloys is their inertness to peroxide bleaching solutions.

The hard, smooth surface of stainless alloys, coupled with the fact that it is resistant to the action of oils and soaps employed in fulling, makes it an excellent metal for linings, crimp boxes and other accessories used in fulling mills.

It is also used in making draw and guide rolls, steam rolls and many other parts of equipment,

*Mr. Goodavage is a member of the faculty of the Philadelphia Textile School, and Mr. Hinkle is an engineer with Republic Steel Corp.

employed in crabbing, shrinking, decatising and other finishing machinery.

In the silk and rayon fields, where processing equipment must be of glass-like smoothness wherever it comes in contact with these fibers, stainless equipment is being widely used in dyeing and finishing equipment.

Drying cylinders of stainless steel are rapidly increasing in number in the drying of cotton and allied fabrics, where they have materially lowered the cost of this operation.

Being non-catalytic towards peroxide and hypochlorite solutions and in addition, resistant to the alkalies and acids used in the operations of kier boiling and bleaching, it is now possible to carry out all these operations in one vessel, regardless of the bleaching agent employed. However, hypochlorite bleaching solutions should not remain in contact with stainless for continuous periods but only for the time required for bleaching and should be washed clean after the bleaching period or the bleaching to be one of a sequence of operations, such as scouring, washing, bleaching and dyeing.

Stainless steel kiers with all accessories of the same alloy are now available in any size.

In cotton dyeing, the success of stainless equipment is traceable to its inherent qualities of corrosion resistance and cleanliness, which have enabled it to occupy a prominent position in the field of cotton dyeing and finishing.

Maintenance of Stainless Steel

While stainless alloys are sufficiently resistant to various textile chemicals, they are, in no sense, fool-proof. With careful attention in their application and fabrication, their usefulness may be extended over a long period of time.

An excellent example of this is in the construction of linings for wooden dye tanks. It is generally accepted that solid stainless construction is to be preferred to light gauge linings, however, in some instances, economics are in favor of linings. Where linings are employed the following precautions must be observed because of the definite possibility of contact corrosion or pitting developing on the wood side of the lining:

1. Use sheet material sufficiently heavy (18 to 20 gauge) so that welded seams can be employed. Lock seamed and soldered joints have not been satisfactory, as the expansion and contraction of the metal has a tendency to loosen or break the joints and the various solders are not entirely resistant to the solutions handled.

2. Reduce corner welds to a minimum. Use fairly large radius in corners. This promotes easy cleaning or rinsing and acts as an expansion joint to absorb stresses developed by expansion and contraction.

Illustrations, courtesy Republic Steel Corp.

A kier with shell of stainless steel. Each kier is 8 feet in diameter, holds 4,000 pounds of yarn at each boil. . . . . . .

3. If an old tank is to be lined, neutralize all absorbed acids and dyestuff in the wood by boiling with caustic soda solution—dry thoroughly. Make as waterproof and as tight and smooth as possible and paint with a good, asphaltum base paint.

4. Paint the outside surface of the lining with asphaltum base paint being sure coverage is complete.

5. Extend sides and corners of tank lining over wood, so that seepage cannot occur between tank and lining when tank overflows.

6. Eliminate the possibility of contact corrosion by separating the stainless lining from the wood tank with stainless steel channels spot welded to lining.

Some equipment manufacturers are reluctant to quote on lined tanks for the above mentioned reasons, instead they recommend all-stainless tanks. Slightly heavier gauge material is used for re-inforcing on the outside with stainless or steel members. If stainless re-inforcing is used, this can be welded to the tank as an internal part. If steel is used, this is designed as a cradle and must be kept painted. Welding steel to stainless is not recommended except on heavier gauges, as diffusion of the steel into the stainless lowers the alloy content, resulting in low corrosion. This also results in brittle welds, unless a higher alloy, such as 25 Cr-20 Ni is used—also, in some cases, the difference in expansion between steel and stainless has developed cracking. Stainless steel has an expansion rate approximately twice that of common steel.

Cleaning Stainless Steel

Equipment of stainless steel in nearly all cases only requires a flushing with water between operations. This can be quickly carried out with the aid of a length of rubber hose by which the machine operator directs a stream of water around all sides and down towards the drain.

Where hard water is used in processing, a scum of insoluble salts often forms around the machine, usually around the air-liquor line. When oils or similar assistants are employed in such water, this scum assumes a sticky character and re-

sists all efforts of removal by flushing with water. A precipitate of the above nature can ordinarily be removed by rubbing it with a cloth soaked with a strong solution of sodium pyro phosphate or similar preparations.

By incorporating a mild abrasive, such as whiting, or China clay, to form a paste with the phosphate, a more efficient cleansing results. This treatment, followed by a flushing with water, ordinarily leaves the equipment in a clean and usable condition.

A stainless steel sponge coated with the aforementioned paste quickly removes the most stubborn precipitates.

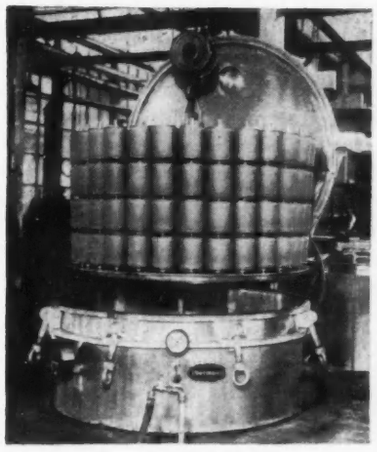
The use of steel wool or the household type sponges of copper or iron is to be avoided. When a sponge of copper or iron is used, minute particles of these metals adhere to the stainless steel and may be responsible for defective work or a discoloration of the equipment.

Of the aforementioned sponges, iron is the worst offender and on one occasion—following the use of an iron sponge—a lot of wool bleached in stainless equipment with hydrogen peroxide was ruined—the particles of iron left in the equipment being responsible. Where iron rust has formed on stainless through contamination or contact with iron, a treatment with a 2 per cent oxalic acid solution will usually remove it. This treatment must be followed by a thorough rinsing with water and then a solution of washing soda—to neutralize the last traces of acid, finally rinse well with water.

Other dye stains, especially whose microscopic size particles appear to be imbedded in the surface structure of the steel, usually require more drastic chemical treatment for their removal. This type of staining occurs along the liquid-air line and is characteristic of certain basic chrome, sulphur and vat dyes.

Basic and chrome color stains, together with sulphur dye stains usually respond to the rubbing action of a cloth treated with a paste made of bleaching powder and whiting, followed by a rinse.

The vat dye stains are more persistent—a rubbing with a wool dauber, saturated with chromic acid (made from concentrated sulphuric acid and chrome) usually removes these. Chromic acid, a powerful oxidizing agent, often used in cleaning laboratory equipment of stainless, appears to have little if any destructive action. In fact, it is claimed to be beneficial in action, which is of a passivating nature.



A package dyeing machine, in which tanks, adaptors, perforated spindles, sockets, caps and castings are all of stainless steel.

Concentrated nitric acid, which is also a powerful oxidizer, can also be used for removing dye stains.

The use of concentrated sulphuric or hydrochloric acids is not recommended for use on stainless equipment.

These acids have a destructive action on stainless and when used in processing, they should always be used in a diluted condition—not above a 3 per cent solution and at this concentration, at a room temperature.

Fabricating Stainless Steel for Textile Equipment

Since most of the fabrication of stainless steels for textile equipment will consist of shearing, blanking, forming, machining, welding and grinding, we feel that it would be well to discuss each of these briefly in detail.

Shearing and Blanking—Stainless steels cannot be sheared with the same clearance used on ordinary sheet steels. The metal must be cut through the entire thickness. It will not snap or break off as will other materials. Hence, it is suggested that the shear blades be maintained with very close adjustment and with as keen an edge as conditions will permit. Dull shear blades used in trimming a narrow margin on light gauge metal will have a tendency to drag and turn over the edge of the metal instead of parting it from the sheet.

In blanking or punching, a much closer clearance should be maintained to eliminate dragging the metal and causing burred edges. Definite figures cannot be given and will vary according to the thickness of the materials. Some shops work to a clearance of 1/10 the thickness of the metal.

Example: .010" Gauge Material—Punch ¼"—.250 Dia. DIE .251—.252 Dia. or reverse—DIE .250 Dia. PUNCH .248—.249 Dia.

Forming—This factor in textile equipment is confined mainly to brake work as very little deep drawing or spinning is employed on this equipment. The only feature to bear in mind in brake operations is that stainless steel has practically twice the strength of ordinary steel and will require additional power when compared to ordinary sheet iron or steel. It is well to increase the radius slightly over common steel sheet.

Machining—Due to their high alloy content and toughness, stainless steels cannot be machined at the same speeds and feeds as regular alloy steels. Using Bessemer screw stock as 100 per cent, the machining properties of the materials listed compare as follows:

	Relative Speeds	Surface Ft. Per Minute
Bessemer Screw Stock..	100%	165
S.A.E. 2330 Annealed..	54	90
S.A.E. 3135 Annealed..	70	115
18-8—Free Machining..	60	100
14-18% Chromium—Annealed (Approx) .. (Free Machining)	90	150
10-14% Chromium—Annealed (Approx.) (Free Cutting)	91	150
14-18% Chromium—Annealed (Approx.)..	54	90
18-8 Annealed (Approx.)	45	75

Due to the extreme toughness of the 18-8 (chromium-nickel type,) the machinability is approximately one-half that of Bessemer screw stock. By the addition of other alloying elements, the machining time of 10-14 per cent chromium and 18-8 has been considerably improved. As noted above, the machinability of 14-18 per cent chromium free machining is approximately 90 per cent that of Bessemer screw stock. The tools for machining stainless steels should be of the high speed steel types. Because of the high friction created during machining operations, regular car-

bon tool steel does not possess the stability, and the edges are rapidly dulled and broken down. The addition of elements necessary to develop better machining qualities effect corrosion resistance slightly and should be considered where corrosion is severe.

In machining stainless steels, it is very essential that a constant feed be maintained. Should the tool be permitted to ride the surface of the work without cutting, work hardening of the surface metal will occur. Even though the tool has been removed and reground, it will be found very difficult to penetrate. To simplify matters, the different types of operations to which the materials are subjected, and the approximate speeds and feeds to meet these variations, using bar machining as a basis are discussed in following paragraphs.

The hardness range of the straight chromium alloys most suitable for machinability is 196-228 Brinell. In some cases, the hardness of the chromium-nickel types may be slightly lower, such as 187 maximum after annealing and cold drawing. To cover properly the machining of stainless steels by turning in lathe-hand screw machines or automatic screw machines and give the proper speed and feed would be very difficult.

Tools for cutting and turning should have a side and end clearance of approximately 4 degrees. Side tools or special forming tools require similar grinding, that is, more hook or rake.

(In the second and concluding installment, to appear soon, the authors will continue this discussion of the operations involved in fabricating stainless steel for textile equipment. The following operations of drilling, sawing, threading and tapping will be covered, then lubrication, and electric arc and gas welding, etc.)

Modern Inventors Receive Recognition

IN CELEBRATION of the 150th anniversary, this year, of the American patent system, the National Association of Manufacturers have made awards, throughout the nation, to Modern Pioneers: the inventors who, under this system, and as "modern pioneers on the industrial frontiers of American life" have made contributions to national progress.

Nearly 600 men, in all types of industry, were selected for these awards, from 1026 nominations, and at strategic points throughout the country, the awards were made in groups at 14 banquets. The purpose of the awards was "to make clear the achievements of industrial pioneers and American industry in creating a more abundant life for our people"; to dispel the fallacy prevailing in many minds, as described by the chairman of the awards committee, Robert L. Lund, who pointed out that: "Many of our people, some of them in high places, do not understand that industrial frontiers have taken the place of geographical frontiers in our nation. They preach a philosophy of a static society, one in which there are no frontiers and in which the door of opportunity is closed to initiative and enterprise. Successful men and successful business have been attacked and patents were assumed to be the instruments of undesirable monopoly not subject to law."

On the other hand, as pointed out by H. W. Prentis, Jr., president of the association, "during the period of our greatest technological advance—1870 to 1930—while the population of our country nearly trebled, the number of gainfully employed persons nearly quadrupled and the volume of production increased about eleven-fold. Did invention take away jobs faster than other jobs could be found in those years? Obviously not. * * * The more goods and services we can buy with the proceeds of our own labor, the less each item has cost to produce and distribute, the more employment we require on the part of producers. * * * Invention has created infinitely more jobs than technological improvements have destroyed. 84 per cent of all machines invented are 'labor-saving' rather than 'labor-displacing'—designed to create entirely new products, render new services, or improve old products or services. One out of every four persons employed in America today holds a job in an industry unknown in 1870."

In recognition of these facts, and in order to dispel an attitude of "defeatism" expressed in many circles, even by the President of the United States who recently suggested that "the efficiency of our industrial processes has created a surplus of labor"—the Modern Pioneer Awards were made.

In the cotton-textile industry, three awards were made—to Russell B. Newton, superintendent of Bibb Mfg. Company, Columbus, Ga., Leon A. Graybill, now with Firestone Tire & Rubber Co., and Eugene C. Gwaltney, of Saco-Lowell Shops and Bibb Mfg. Company, for their inventions in the field of heat-resistant tire cord. A group of 11 men with E. I. du Pont de Nemours & Company, Wilmington, Del., were given a special award for the discovery and perfection of nylon. Hayden B. Kline, vice-president of Industrial Rayon Corp., Cleveland, Ohio, received an award in connection with the development of the processes used in rayon manufacture in the company's Painesville (Ohio) plant.

Camille Dreyfus, head of Celanese Corporation of America, New York City, was another recipient in the rayon field.

Knitting was represented among the award recipients by James P. Grey, Jr., of Grey Hosiery Mills, Hendersonville, N. C., and Walter Larkin, of Fidelity Machine Co., Philadelphia; and Harry S. Drum, of Smith, Drum & Co., Philadelphia, received an award in connection with dyeing equipment. William B. Hodge, of Charlotte, N. C., vice-president of Parks-Cramer Company, of that city and Fitchburg, Mass., received an award in connection with humidification and air conditioning work, and Willis H. Carrier, of Carrier Corp., Syracuse, N. Y., was one of the 19 National Modern Pioneers, whose work in the development of air conditioning and other fields gave him this recognition.

The complete list of awards, too numerous for individual listing here, embraced many men whose work is related to the textile industry, in many directions. Among other recipients with companies related to the textile industry were the following:

Sanford L. Cluett, of Cluett-Peabody and Co., Troy, N. Y.; Martin H. Ittner, of Colgate-Palmolive-Peet Co., Jersey City; Walter S. Landis, of American Cyanamid Co., New York City; Roy A. Shive, of Calco Chemical Co., Bound Brook, N. J.; William B. Newkirk, Corn Products Refining Co., Argo, Ill.; Frederick S. Denison, of Minneapolis-Honeywell Regulator Co., Minneapolis; John N. Carothers, of Monsanto Chemical Co., Anniston, Ala.; Harold F. Hagen, of B. F. Sturtevant Co., Boston; Walter Geist, Ray C. Newhouse, and William M. White, of Allis-Chalmers Mfg. Co., Milwaukee, Wisconsin.

E. I. du Pont de Nemours & Co., General Electric Co., Westinghouse Electric & Mfg. Co. and other industrial titans of the nation were each represented by numbers of men who received awards for inventions in a wide diversity of fields.

LENO WEAVING *Article I* by Ivar Moberg

SUCCESS in leno weaving is one of the most difficult to attain, but the difficulties are by no means insurmountable. It is, however, necessary to have the condition right, for in leno weaving, more than in any other type of weaving, it is paramount to pay attention to even the smallest details. Especially this is true if fine single yarn is used.

The yarn must be made from good stock, evenly spun with a relatively high twist multiplier to withstand the terrific abrasive effect of the cross shed. The yarn must also be free from bunches, slugs, knots and hairiness. The sizing of the warp must be suitable for leno weaving, properly mixed and boiled, and applied so that it will have maximum penetration, producing a thread that is smooth and "slippery". The warp must be well made on a balanced and true running loom beam. The loom must be thoroughly gone over and put in A-1 condition. Any worn part of the loom should be replaced and everything should be tight, without any play or lost motion. Doup heddles must be selected of the proper weight, gauge and size for the fabric to be woven.

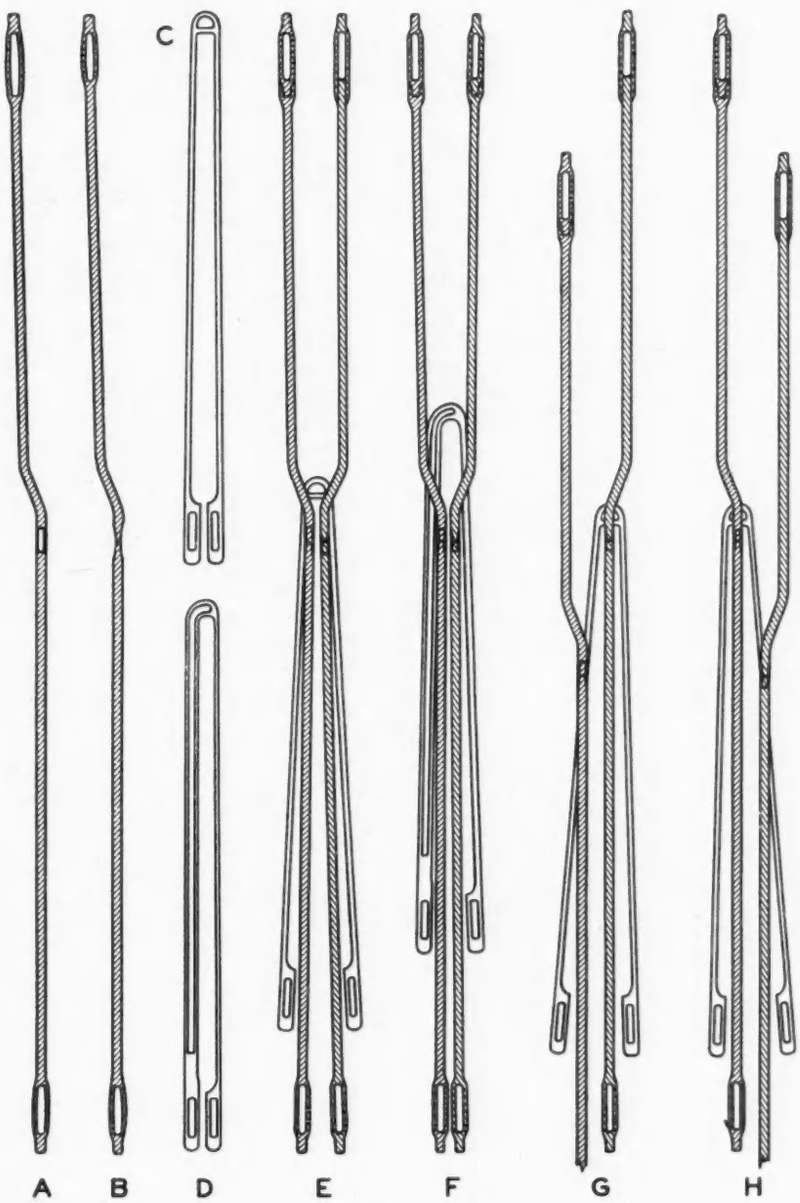


FIG. 1

Leno is essentially an open mesh weave which allows a great displacement of both the warp and the filling. By utilizing the displacement of the warp and filling to the fullest extent, fabrics of unusual beauty may be produced. The leno weave lends itself most beautifully to curtain materials and ladies' dress goods, and in the more simple form, to such fabrics as mosquito netting, embroidery fabric, fruit and laundry bags, breaker fabrics, dish cloths, etc.

Types of Doups

There are several methods, by which the leno weave can be produced, which include the employment of:

1. *Worsted Doups.* Now obsolete, except for full turn leno.
2. *Beads.* More or less obsolete.
3. *Leno Reeds.* Used for plain leno only.
4. *Steel Doup Heddles.* Most universally used today.

Since the method of employing the steel doup heddles for leno weaving is so generally used, this article will be confined to describing this method only.

Description of Steel Doup

The steel doup consists of 5 component parts. Referring to Fig. 1, these are A, Female doup standard; B, Male doup standard; and C, Doup needle.

In assembling a steel doup, 2 female doup standards, 2 male doup standards and 1 doup needle are used. Insert the male doup standard in the center slot and through the heddle rod slot in the top of the female doup standard. Two sets of this combination are required for each complete steel doup. Placing the two pairs of doup standards so that the off-set in the top center of the standards are pointing away from each other, insert the doup needle between the standards in each set in such a way that the

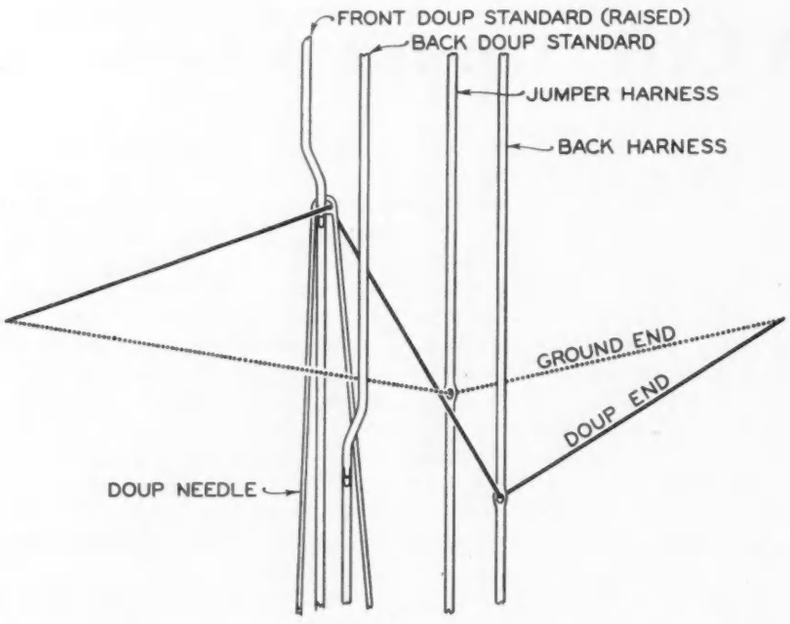


FIG. 2

Crossed Shed Formation

doup needle will straddle the intersections of the two doup standards, as shown in Fig. 1-*E*.

It will be noticed that the doup needle, Fig. 1-*C*, has a closed eye through which one or more doup threads may be drawn. However, the doup threads, if more than one, will always weave as one, since they can not be separated in the closed eyes. In fancy leno weaves, where two or more doup threads must be separated at intervals to produce a pattern, the super doup needle, Fig. 1-*D*, must be used. The super doup needle has a long open slot in one of its legs instead of a closed eye. The threads drawn in this slot are free to be controlled by the regular harnesses, when the slot is exposed by raising the back doup standard. The super doup needles should be so placed between the two doup standards that the slotted leg points toward the front of the loom, as shown in Fig. 1-*F*.

The smallest number of harnesses by which a plain leno may be produced is three. Of these, two are operating the front and back doup standards and the third is the jumper harness which always remains in down position for every pick but rises half way up and down again between the picks. The object of this jumper harness is to lift the ground threads above the point of the needle so that this may come up on either side of the ground thread. This harness is operated by a jumper motion, of which there are several in use. The loom builders will supply a toggle joint jumper motion driven from the rocker arm of the dobby and a fan type jumper motion driven from a hand wheel crank on the crank shaft. Although both of these may be used for fancy leno, the fan type jumper motion is preferable for any class of leno work, as it is stronger and permits individual timing. The loom builders will also supply a jumper motion for straight leno work on a head motion loom. Ingenuity of mills has produced several good jumper motions for straight leno of which the following may be mentioned:

1, employing a double plain cam, or in other words, a 4-throw plain weave cam, and running this at a 2-throw cam speed. Since the jumper harness is attached to the treadle in the usual manner, it is obvious that the harness will move in double quick tempo and the cam may be timed so that the harness will be down at the pick. Since the harness moves half way up only, it is necessary that the cam have a short throw.

2, using a regular plain 2-throw cam, either directly on the bottom shaft, or on the auxiliary cam shaft, and connecting both treadles to the same harness. It is obvious that as the cam revolves, one of the treadles will pull the harness down at the pick and then permit it to rise half way up where the control is taken over by the other treadle going down and the harness is again pulled down into the bottom shed. With this arrangement only one of the treadles is in contact with the cam at any time, except for the brief period when the two treadles meet.

3, using two lower jacks of a C. & K. head motion, both of which are spanned by a long stirrup which is, in turn, connected to the jumper harness in the usual manner. The two jacks are operated in opposition, or in plain weave order. As one of the jacks starts to descend, the other starts to ascend. The descending jack, which for one pick has controlled the position of the harness, permits the harness to be pulled up as it starts descending. However, half way up the

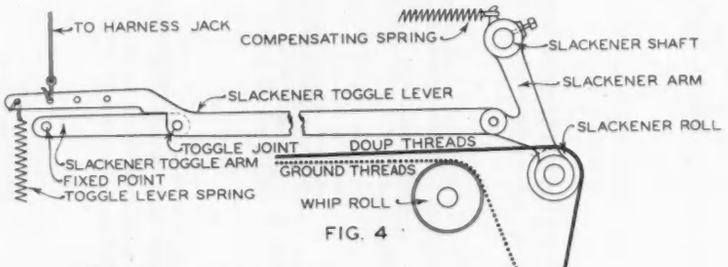


FIG. 4

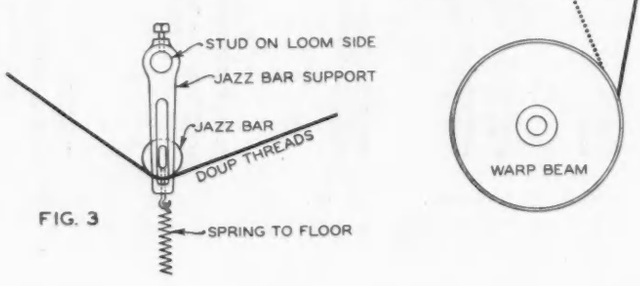


FIG. 3

• MR. MOBERG begins here a three-part discussion on leno weaving, giving, in addition to a description of the principles themselves, practical ideas on the subject derived from years of first-hand experience in leno weaving and its development. Those interested are urged to preserve their copies of each installment as there will be much cross reference from one installment to the others.

Readers are invited to submit specific questions and problems related to leno weaving to this magazine for discussion by Mr. Moberg . . . . . .

stirrup is met by the ascending jack which at this point takes over the control of the harness and again pulls it down for the duration of the next pick. This arrangement can also be used on a dobby, but since the dobby has no lower jacks, the connection to the bottom of the harness becomes more complicated. Furthermore, if the loom is equipped with a dobby, the regular jumper motions can be purchased, which in this case is advisable.

4, a shaft extending across the loom just above the jumper harness and equipped with two top rolls can also be used. In this case the shaft has an arm set-screwed to it at one end. This arm is connected to the back of the lay sword in such a manner that as the lay moves over front center the jumper harness is raised half way up and as the lay moves toward back center it slackens up on the connection so that the harness can be pulled down into the bottom shed during the following pick.

It is obvious that in the three first arrangements a spring will have to be used to pull the jumper harness up, and in the last arrangement a spring will have to be used to pull the jumper harness down. The same spring must be so connected that it will control both ends of the jumper harness to insure an even pull. Do not use two springs, one at each end of the jumper harness, as it would be very difficult to adjust and maintain equal spring tension at both ends.

Going back to Fig. 1, the position of the steel doup in the open shed is shown at *G* and the position in the cross shed is shown at *H*. As can be seen, to form the open shed the first harness in the set is down while the second harness in the set is up. In the cross shed the position of the two harnesses is exactly opposite. However, it must be kept in mind that the formation of an open or a cross shed depends upon the direction in which the warp threads are drawn in the steel doup. Since it is preferable to form the cross shed upon the raised front doup standard, which is nearest the reed, the warp threads are usually drawn to the right in the steel doup. This means that the warp threads enter the steel doup to the left of the back doup standard and run out to the right of the front doup standard. In other words, the drawing-in girl inserts the hook toward her left and draws in the warp threads towards her right. This is also the normal way of drawing in for a right hand person.

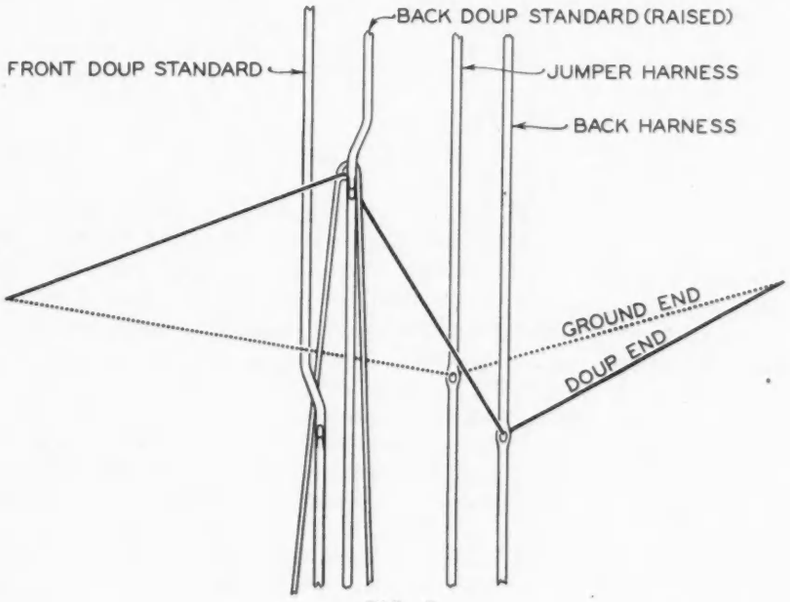


FIG. 5

Open Shed Formation

Fig. 2 shows the position of the doup needle, front doup standard, back doup standard, jumper harness, back harness, doup end and ground end, in cross shed formation. The back harness is stationary and suspended approximately 2 inches below the bottom shed. It should be held down by springs which yield slightly to the additional strain on the doup end while this is in the cross shed. The back harness may be dispensed with and replaced with what is known as a jazz bar, Fig. 3. This is a rod of approximately ¾-inch in diameter. It is suspended in brackets at each side of the loom in such a way that it is free to move slightly upward on the cross shed. A spring at each end of the rod holds this down upon the doup threads. At the insertion of this rod raise all harnesses, except the doup standards, which should remain in bottom shed position. The rod is then inserted between the upper and lower warp threads so that it will rest on the doup threads alone. The jazz bar may in some cases act as a negative slackener on the cross shed. As the cross shed is formed, the additional tension of the doup threads will force the jazz bar to rise in the slots of its supporting bracket against the spring resistance.

Better, in the writer's opinion, is a positive slackener, Fig. 4, operated either by the jack of the cross doup standard, or by a special jack of the dobby or head motion, or by special cam arrangement. It is obvious that, since the doup end in the cross shed crosses under the ground end and comes up on the other side of the latter, the doup end must be slackened up to compensate for the increased length which it occupies. Hence, some arrangement for yielding or slackening must be used. The difference between a negative and a positive

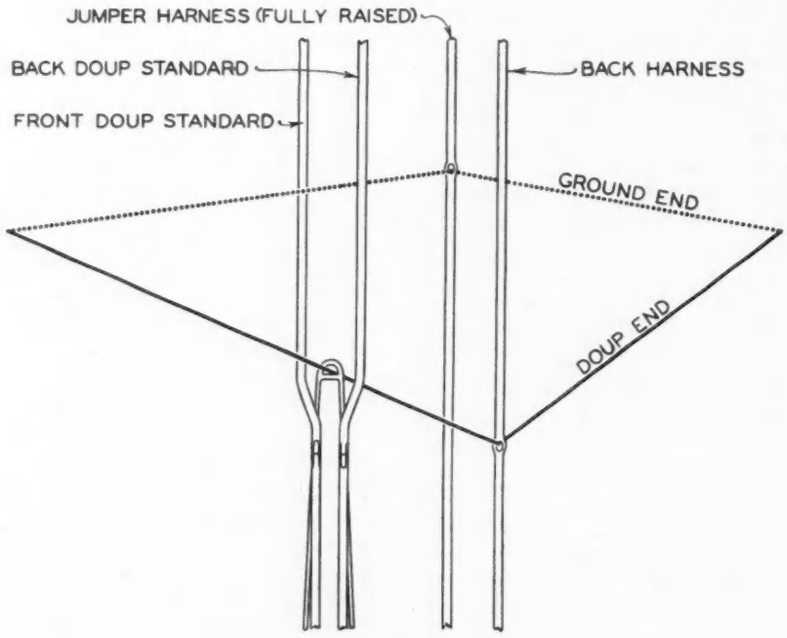


FIG. 6

Plain Shed Formation

slackener is that in the first case the doup ends themselves must forcibly make some point to yield, while a positive slackener will slacken up a certain amount on the doup ends, through some mechanical movement. The positive slackener is therefore preferable as it subjects the doup ends to less strain.

Fig. 5 shows the position of the doup heddles, jumper and back harnesses in the formation of the open shed. The doup end and the ground end occupy exactly the same position as they were in the cross shed with the exception that the doup end, which in the cross shed was brought up on the left side of the ground end, now has been brought up on the right side of the ground end, viewing it from the front of the loom. Thus it will be seen that on straight leno the doup end is always raised over the filling on each pick, first on one side, then on the other side of the ground end, the latter always remaining in the bottom shed.

Fig. 6 shows the position of the doup heddles, the jumper and back harnesses and the doup and ground ends in plain shed formation. The plain shed is not used in straight leno weaving but in fabrics in which leno and plain weaves alternate to produce fancy patterns. It will be seen that in this shed, the doup end and the ground end have changed position, the doup end being in the bottom shed and the ground end in the top shed. In plain weave the jumper harnesses are raised into top shed position and both doup standards lowered into bottom shed position for one pick. On the next pick either of the doup standards may be raised and the jumper harness lowered. As long as the same doup standard is raised on alternate pick, plain weave is produced. As stated, plain weave can be produced by raising either of the doup standards, but since the raising of the front doup standard produces a cross shed with its increased strain on the warp threads, the plain weave, whenever possible, is produced by raising the back doup standard on one pick and the jumper harnesses on the other pick. In leno and plain weave combination, the jumper motion must be so arranged that the jumper harnesses can be raised all the way up into the top shed by regular harness motion, while the plain weave portion is produced.

(The second installment of this series on leno weaving, by Mr. Moberg, will appear in an early issue.)

A Better Way

An assistant foreman in a plant department in which a good deal of welding work was done, took up a course in welding in a night school. There the latest methods and the use of the most improved welding equipment were being taught by an expert from a company manufacturing welding equipment.

This assistant foreman soon learned some things in his night course which made him realize that they were not taking advantage in his plant of some of the improved equipment available, so he suggested to his foreman to recommend to the management that they obtain the necessary new type attachments and set up to do the welding in the latest approved way. He told the foreman that this would not only improve efficiency but would turn out a much better quality job.

The foreman resented this "advice" from his assistant and told him, "Just because you're going to school you needn't think you're smarter than men who have been running this job for a good many years!"

After being thus rebuked, the assistant foreman was undecided as to what to do. Bad feeling would undoubtedly be stirred if he went over the foreman's head. Still, he felt it his duty to win acceptance for the quality-improving suggestion.

The assistant foreman solved the problem by suggesting to his night school instructor that he have some one from his company call on the superintendent and sell this improved idea directly to him. This was done, and the suggested improvements are now installed and working out successfully.

Certainly, every supervisor should welcome a suggestion from any source which will help to improve the quality of workmanship.

—"Management Information", Elliott Service Co., Inc.

CLOTH ROOM PRACTICE

By John Dane

(Part Two*)

Continuing a discussion begun in the March issue on modern cloth room procedure and equipment . . .

THE PILLOW tubing is stitched, brushed, sheared and made into rolls by the same machines that are used for narrow goods and flannels.

There are at least three methods for inspecting pillow tubing. One is to take the roll after delivery from the roll-up machine and inspect over an inclined table in the same manner as was followed for inspecting narrow goods. It is necessary of course to run each roll twice in order to inspect both sides of the tubing.

Another method is to use a different type machine, one having an inclined table but also equipped with a cradle at the bottom part of the machine. The first cut of the roll is run up over the table and inspected on one side and rolled on an iron rod at the top of the machine. The thread is then pulled from the seam and the cut put into the cradle and run over the table so that the opposite side may be inspected. Under this method the inspected tubing is folded and placed on trucks.

The third method is to have the roll of tubing first folded and then inspected on a flat table in such a manner as will permit all of both sides of the tubing to be burled. The inspected goods are placed on trucks.

Under the second and third methods the goods which have been placed on trucks in bale lots are sent to the entry clerk for usual records to be made of the yards and weight. The goods are then packed for shipment to the bleachery in bales. The bales may be entirely covered with paper and burlap or have only one end covered.

Wide Sheeting—42-inch to 108-inch

Mills use two methods of starting operations in the cloth room on wide sheetings from 42 to 108 inches. One is to inspect goods before brushing and shearing—the other is to brush and shear before inspecting.

The usual procedure for goods which are to be inspected first is as follows: The double cut of sheeting is put into a cradle which is equipped with hollow iron rollers and the cloth is run over an inclined table and wound on an iron rod at the top of the inspecting machine—the cloth running from the bottom toward the top of the table. Sheeting from 42 inches to 50 inches inclusive is handled by one inspector while that from 54 inches to 108 inches inclusive requires two inspectors to burl properly. Imperfections which cannot be suitably repaired are torn out and whatever part of the cut has been inspected is removed from the iron rod and placed on a truck. The balance of the piece is then inspected, removed from the rod and placed on the receiving truck.

Oil is removed by the use of soap and water when inspecting goods for the grey market. If goods are to be bleached a liquid oil remover is applied with a brush and allowed to remain on the cloth. Bleaching processes will remove the oil which has been acted upon by the solvent. The inspected goods are now trucked to the stitcher where separate pieces are stitched together by means of a railway stitcher equipped with a sewing machine which will produce a flat or butted seam.

The sheeting is run into a wide scray capable of holding several hundred yards and then passes through a wide horizontal brusher which is equipped with beater blades, emery or sandpaper rolls

*Article One appeared on page 51 of the March 1940 issue.

and wire and bristle brushes. The goods now pass through a wide shearer and selvage trimmer. This machine is equipped with two spiral revolving blades—one for acting on each side of the cloth.

When the goods are to go to a bleachery, they are rolled by means of a roll-up machine into rolls of the size wanted. The goods may be rolled on a steel shaft which is removed after the rolling process or may be rolled on cardboard tube which is allowed to remain. Goods to be further processed for the grey market may be run on wooden rolls or cardboard tubes as desired.

It simply means that the order of these processes is reversed if goods are brushed and sheared before inspection. The brushed and sheared roll of approximately 1000 yards is placed upon a stand behind the inspecting machine and the goods inspected as described for this type of machine—the threads being pulled at each seam as it comes to the top rod.

Inspecting Wide Sheeting

A new method of inspecting wide sheeting (54 inches to 108 inches) has lately been adopted by one of the leading cotton mills of our country. This method is as follows:

The goods are stitched, brushed, sheared and delivered from the roll-up machine in rolls of approximately 1000 yards and rolled on a two-inch cardboard tube. The roll is then placed at the back of one of the units of a new type tandem inspecting machine. The cloth is run up over an inclined table into a double scray which will hold about seven hundred yards. An inspector burls one-half of the width of the cloth from the battery side over. From the scray the cloth is run down over the front unit of the tandem machine where another inspector burls the opposite half of the cloth, that is from the shipper side over. The cloth is made into a roll of about 1000 yards on the back of this front unit.

No tearing for defective work is done by the inspector on the back unit but when such a place is found the inspector indicates same by marking on the half of cloth to be inspected by the girl on the front unit who does whatever tearing may be necessary. Should it become necessary to prevent a whole cut or any part of same from being rolled up in the inspected roll, it is accomplished by means of a separate rolling device on the front machine.

A portable stitcher equipped with a sewing head is used to make seams where necessary.

The front unit of each tandem machine is equipped with a yardage attachment which indicates the total yards in the original roll, the yards of each piece removed and the yards of each piece remaining in the finished roll.

Sheeting intended for the grey goods market is given the same stitching, brushing and shearing treatment as goods for the bleachery with the exception that steam is sprayed on the goods, by means of a perforated pipe, just before they are put through the roll-up machine. The two rolls of the roll-up machine are also heated by having steam passed through them. These two treatments smooth out wrinkles and also give the sheeting a little different feel.

Doubling Sheeting

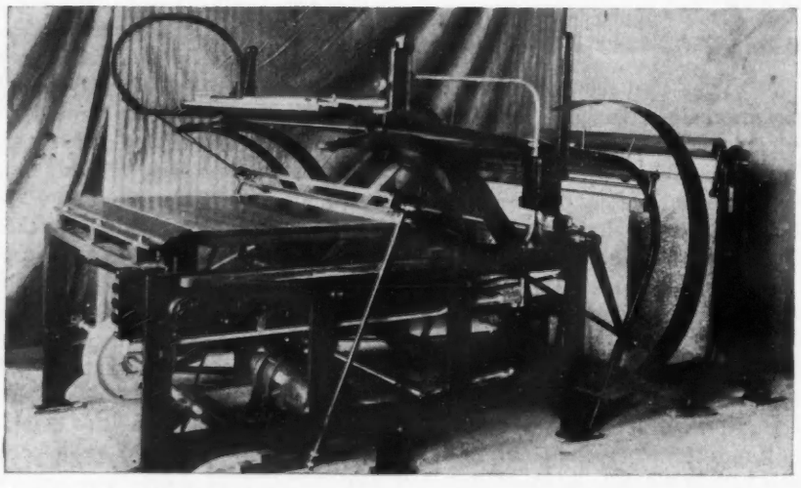
The sheeting that is to be doubled is taken from the roll-up machine in rolls of either 500 or 1000 yards approximately. Sheeting from 42 inches to 54 inches inclusive in width is usually doubled once and wound on a flat cardboard by being run through a combination single doubler and winder.

The wider sheeting, 60 inches to 108 inches inclusive, is put through a double-doubler which doubles the cloth twice and rolls it on wooden or cardboard cores. The sheeting which is now in rolls of one quarter of its full width, is placed upon the winder stand and is wound on flat cardboards. Yardages are obtained by a productometer with which the winder is equipped.

The outer end of the wound piece is now folded in about ten inches, slydins inserted in both ends of the piece and paper bands placed around the cut about two inches from each edge.

In some instances when goods are to be doubled and folded instead of being wound on flat cardboard, they are run through the doubler and fanned in a pleated fold upon a truck at the delivery end of the doubler. This cloth is then put upon a flat table and measured in one yard or one and one-quarter yard folds by an operator called a "rodder". The cloth is rodded between four short steel pins by means of three steel rods of the proper lengths. The cloth is then counted, folded and tied with strong twine.

It is the practice in many mills, when goods are to be double-doubled and folded, instead of being wound on flat cardboard, to



Courtesy, Curtis & Marble Machine Co.

Cloth folding machine with motor drive and automatic stop, so equipped so that machine stops automatically when seam comes up

roll the goods up in large rolls of about 500 yards from the double-doubler. These rolls are left several hours or overnight to allow the creases to be set, and then are run on a regular cotton folder, in either one yard or one and a quarter yard folds.

The wound or folded goods are now placed upon a truck for the entry clerk to record. After which they are sent to a small table where two operatives are engaged in wrapping the finished pieces. The pieces are wrapped in paper upon which the proper ticket and labels have been pasted, tied with strong twine and placed upon a truck which is then sent to the packer.

Packing Wide Sheeting

There are various methods employed in packing wide sheeting and I will enumerate several—

For bleacheries and finishing plants:

a. Rolled and ends of roll only covered with burlap.

b. Rolled and entirely covered with paper and burlap.

c. Baled and one end only covered with burlap.

d. Baled and entirely covered with paper and burlap.

For manufacturers, wholesalers, jobbers and retailers:

a. Baled and entirely covered with paper and burlap.

b. Cased — packed in heavy wood or veneer box.

c. Packed in carton conforming with transportation regulations.

d. Rolled and entirely covered with paper and burlap.

Various supplies are necessary for preparing and packing goods for the brown sheeting trade. Among the required supplies are winding boards, bands, slydins, tape, twine, wrapping paper, waterproof paper, wooden cases, veneer cases, sewing twine, steel strapping, cardboard tubes, wooden shells and cartons.

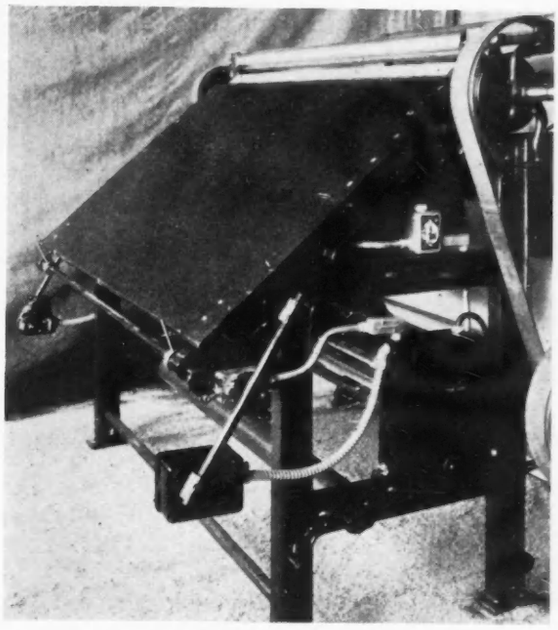
The packed goods which are to be held for future delivery are trucked to the warehouse. Great care should be taken to see that goods stored in the basement do not mildew. It is often necessary to pile goods on joists so that they are at least four inches from the floor. Bales should always be stored above the first floor or at least have a dry space between the ground and the flooring.

If plenty of space is available, heavy cases should be in single tiers. Bales may be placed two or three tiers high by hand or higher by the use of mechanical pilers. Lighter containers can be piled by hand several tiers in height. Warehouses which are steam heated should have only a very moderate amount of heat as goods will lose considerable weight if held for any great length of time.

The writer will not go into detail with regard to the handling of seconds, short lengths, remnants, rags, etc., of the several classes of goods as many of the put-ups are somewhat similar to those used for first quality goods.

In conclusion let me say that the cloth room should always keep in very close touch with the weave room. All bad cloth should be reported to the weaving overseer as soon as possible. It is also a very good plan to have the overseers of carding, spinning and dressing come to the cloth room frequently to look over some of the defective cloth.

Inclined table cloth inspecting machine with "electric eye" control. Machine is stopped and started by interrupting beam of light passing in front of machine; operator can do this by bending the knee. Cloth reversed by means of rod below lower edge of incline table.



Courtesy, Curtis & Marble Machine Co.

Repeater

It seemed to the foreman that he had made out a considerable number of passes to the first aid room for Al Johnson during the past few months. He checked the record back for a year and was astonished to find that Johnson had gone to the first aid room on an average of twice a week to be treated for some slight injury.

"Al," the foreman said to the man, "let's get right down to brass tacks on this accident business. Do you realize that you do something to yourself on an average of twice a week that requires first aid attention?"

"Yes, I guess I am pretty unlucky that way," Johnson replied.

"You mean you're lucky you're alive, because any of these small accidents might just as well have been something serious. If we can't cut down your injuries, we're going to have to transfer you to some job where you have less opportunity to injure yourself, or others."

But, in spite of everything the foreman did, Johnson's record did not improve. So the foreman offered him another job in the stockroom.

It paid less money, so Johnson quit. He soon got a job in another plant, but within two months he was in the hospital as the result of an accident.

Do you think that an employee who cannot or will not correct unsafe working habits should be discharged?

Workers' Pet Peeves

"My boss hasn't given me a pleasant look as long as I can remember. I never saw such an old vinegar-face. Even my baby smiles with a colic pain, but I believe you could hand my boss a free trip to the World's Fair and a new car to go there in and he still would be afraid to crack his face with a smile.

"I could get a lot more enthusiastic about my job if he would just come around once a week, or so, with some pleasant remark, even if it was only about the weather. I'd know that he was human, anyhow. He goes around with a scowl on his face as if he was afraid that if he did smile somebody would hit him for a raise."—"*Management Information.*"

Textile Committee of Testing Society Meets in Charlotte

Reported by the Editor

TECHNICIANS who develop and apply many of the standards recognized in textile test methods and product specifications gathered in Charlotte, N. C., at the spring meeting of Committee D-13 of the American Society for Testing Materials, on March 13 and 14. The parent organization is the national authority in testing procedure and specifications, and Committee D-13 is its textile division, recognized as the authoritative source of testing methods for all types of textiles by the three groups involved: producers and consumers of textiles, and the general interests affected.

Third Southern Meeting

This was the third meeting that the committee has held in the South. It met once in 1926 at Greenville, S. C., (in conjunction with the Southern Textile Exposition) adjourning to Atlanta, Ga.; and again in Charlotte just 10 years ago in 1930. The return visit this year was in an effort to attract greater interest and attendance from representatives of textile manufacturing plants, and while the number present from the southern mills was not up to the officers' expectations, this representation was considerably greater than in the two previous instances, and it is hoped that as subsequent meetings of the committee are held in southern cities, the active interest among southern textile producers may greatly increase.

The Society, and, in textiles, its Committee D-13, occupies a position of authority and prestige in relation to testing procedure and specifications. Its first impress was in connection with specifications for heavier materials, but its influence is rapidly broadening and more and more it will become a factor of increasing importance in the field in which it operates, and it will be definitely to the interests of southern textile manufacturers to display to the fullest extent an active participation in its affairs and specifications, which affect so directly the operation of the mill and the required specifications for its products.

There were at the Charlotte meeting approximately 50 members of the Committee, and about the same number of non-member guests. The convention covered two days of intense activity, with a minimum of social functions. Mornings were spent in sub-committee work. On Wednesday sub-committees dealt with the following subjects, discussing in each case the items noted. On *Cotton Yarns*, the matters of appearance standards, testing conditions, regain, yards to reel for test, and tolerance for yarn number were taken up—looking to the establishment of definite standards of procedure along these lines. Likewise, on *Glass Fiber*, proposed specifications and methods of test were reviewed for glass braids and tapes for electrical purpose and glass cloth, as well as abrasion tests, strength and abrasion tests for yarns, pH tests and other topics. *Statistical analysis of test data* was another sub-committee's subject.

How They Work

Atmospheric conditions were treated in an illustrated talk on humidifying and air conditioning systems, in another sub-committee. A sub-committee on *Finishing* discussed water-proofness and moth-proofness of textiles, determination of synthetic resin finishes on textiles, etc. *Household Fabrics*, in another sub-committee, were discussed, particular attention going to tentative specifications for toweling, sheeting, broadcloth and blanket fabric.

The sub-committee on *Tire Fabrics*, participating in a round table discussion of low stretch tire cord, presented a typical illustration of the character and importance of the organization. All afternoon, in this sub-committee, representatives of tire cord producers, and of tire cord consumers—the tire manufacturers—discussed various angles of methods for testing the new low stretch tire cords. There was a wide variance of opinion as to procedure, everyone present having full opportunity to express his views and give his reasons. As was true in every instance where methods are still in the tentative stage, no definite action on this subject was taken at the Charlotte meeting. The significance is that after full further discussion, Committee D-13 will adopt a standard test procedure on this point that will be recognized throughout the tire cord producing and consuming industries as the final doctrine by which all concerned will and must, by common acceptance, abide.

Other subjects, threshed out in sub-committee during Thursday morning, included: *Raw Cotton*: with length, fineness, maturity, and strength properties; cross-sectioning procedure and measurement of certain properties being reviewed. *Testing Machines*: involving sensitivity of vertical pendulum testers and specifications for twist testers. *Rayon*: determination of commercial weight of rayon yarn and staple in packages. *Rayon Fabrics*: Filament and spun rayon fabrics. *Test Methods*: Identification of fibers, quantitative analysis of fiber mixtures, soiling properties of fibers, and fundamental properties of fibers. *Heavy Cotton Fabrics*: standards on moisture regain in these fabrics.

The foregoing represent by no means the entire scope of the Committee's activities, being only those sub-committees with matters actively before them at this time.

On Wednesday evening, an informal banquet was held for the

delegates, at which C. L. Warwick, secretary-treasurer of the Society, discussed its general aims and purposes.

In addition to the sessions of the sub-committees, general sessions presenting technical papers for the entire group were held on Wednesday and Thursday afternoons. The first paper on Wednesday was presented by D. E. Truax, of the Charlotte office of Stein, Hall & Co., who discussed "Synthetic Organic Chemicals in Textile Finishing".

Synthetic Organic Chemicals

Mr. Truax first reviewed the development of finishes, from the beginning—when weight and "hand" were the chief requisites and were attained by starches and gums, and mineral fillers and inorganic chemicals; he told of the advent of the ureaformaldehyde resins, for crush resistance, and how the cost of these precluded general adoption, because of the low price range of most cotton goods.

The introduction of spun rayon materials, however, gave new impetus to crush resistant finishes, he brought out, but here again the matter of cost was involved, and an eventual development was the sizing of spun rayons with a ureaformaldehyde resin-starch mixture. In this process, Mr. Truax explained:

"The quantity of resin used is very much less than in the anti-crease work, since its sole purpose is to give wash resistance to the starch film. Very good wash fastness can be obtained by the proper choice of resin and starch, and by careful handling in the finishing room. Curing is not necessary, as a good drying will insure proper coupling of the resin and starch. Spun rayons finished in this way do not have much crush resistance, but the fabric is stabilized enough to prevent sagging.

"The same resin-starch mixture is also used on cotton when certain definite effects are desired. If it is simply a case of giving some permanence to a starch finish, as in damask table cloths, this would be the cheapest method. A very definite increase in strength may be produced by its application.

"The addition of the resin gives other properties to the starch, of which the most important are resistance to bacterial and mildew growth, and improved dielectric properties. Large quantities of shoe cloths are being finished in this manner, so that the lining of the shoe does not mildew or decompose nearly as badly as it would with a pure starch finish. A corresponding amount of cotton goods for the electrical industry is being sized with resin-starch mixtures to take advantage of the improved electrical properties."

Mr. Truax continued by pointing out that it is often desirable to go further than producing stability, and that the use of fairly high percentages of resins will improve the resistance to shrinkage. "It is obvious that numerous advantages will accrue if it is not necessary to shrink a fabric to produce a non-shrink finish," he said, citing the case of a wide drapery fabric, which normally would require 54-inch grey goods to finish 48 inches after shrinkage; "with suitable handling, and the right type of resin, 52-inch goods will give the same result" without the royalty required on a patented shrinking process.

He next dealt with the important problem of slip-resistance in rayons, saying that fraying and pulling out at the seams can be largely overcome by the use of 1 to 2 per cent of the correct resin, properly applied.

Mr. Truax then discussed recent changes in softening agents used for finishing, from soaps, oil emulsions and glycerines, to sulphonated oils and tallows, and the current so-called permanent softeners, based on quaternary ammonium salts in which at least one of the substitution products is a long chain, or fatty, aliphatic group. If a quarternary ammonium compound is made up so that one of the four groups on the nitrogen is a long chain aliphatic, and the three remaining groups can be removed in processing, the usual softening will take place at concentrations up to 1 per cent, and, with larger amounts, good permanent waterproofing effects may be produced.

Robert W. Webb, principal cotton technologist of the Department of Agriculture, in charge of cotton quality and standardization research, was the final speaker Wednesday afternoon, discussing the influence of locality of growth and season on the fiber and spinning properties of two varieties of cotton. He reviewed tests on cotton of the 1936 and 1937 crops, and illustrated the effect of locality of growth and season—taking samples from 11 widely scattered points of growth.

Dorothy Nickerson, color technologist of the Department of Agriculture, was the first speaker at the general session on Thursday, discussing the "Standardization of Color Names". She described the ISCC-NBS method of color names, and told how it will be applied with benefit in textile colors, in simplification and organization of the terminology and definitions of these colors.

Alexis Sommaripa, manager of the fabric development department of E. I. du Pont de Nemours & Co., spoke next on "Quality Criterions for Spun Rayon Fabrics". The speaker, a recognized authority in the field of rayon fabrics, told of studies made among consumers as to test experience and desired qualities in these fabrics, and reviewed some of the more common complaints and the steps being taken to overcome the causes.

In a short business session, Professor Ball was re-elected as chairman, and W. H. Whitcomb, of the Rhode Island School of Design, Providence, R. I., was re-elected as secretary, of Committee D-13. The fall meeting of the Committee will be held in New York City.

ERRATA

IN THE article, "Checking Spindle Speeds", by E. G. Field, on pages 48 and 49 of March COTTON, several serious errors, due to mechanical mistakes in printing, appeared.

In Line 2, second column, page 48, "Item I" should have read "Item 1". In line 9 of the same column, "in italics while regular type is used", should have read, "in regular type while italics are used".

In the second formula, in the first column on page 49, "Front Roll Speed" should have read, "Front Roll Speed Constant".

In line 17 of the second column, page 49, the word "unchanged" should have read, "exchanged".

We regret these errors, and hope this notice of them will to some extent aid in correcting misunderstandings resulting from them.—The Editors.

Groups Mobilize to Support NATIONAL COTTON WEEK

THIS YEAR stores of many types are mobilizing in support of the 10th annual observance of National Cotton Week, May 17-25. Taking into account the chain store units as well as the dry goods merchants serviced and supplied by the nation's wholesale houses, more than 100,000 retail establishments in metropolitan centers and rural areas alike, will be concentrating their promotions on cotton.

Retailers Accept "Cotton Week"

The fact that retailers in such number—as against less than 15,000 for the first Cotton Week back in 1931—find it profitable to participate in this event is a refreshing commentary on the increased salability and broadened acceptance of cotton goods for many new purposes. At the annual meeting of The Cotton-Textile Institute last October, one of the nation's foremost advertising authorities recounted the retailer's self-interest in stimulating the demand and consumption of cotton in this country. On that occasion, Paul Hollister, executive vice-president of R. H. Macy & Company, New York, stated few indeed of that store's 168 departments do not stock for sale an item made wholly or in part of cotton. More than that, according to Mr. Hollister, almost every department majors in goods to which cotton in some form is a normal complement.

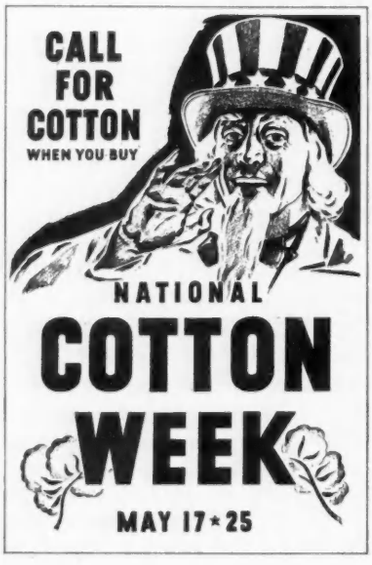
There are, therefore, many opportunities for every unit making up the cotton-textile industry to share in the benefits resulting from Cotton Week's promotions. Not only are increased cotton goods sales an immediate effect, but, moreover, merchants generally are of one mind in declaring that definite and worthwhile continuing advantages accrue from their general display and recital annually of cotton's improved qualities of serviceability.

Cotton Stamp Plan

Providing a new impetus to the sale of cotton goods this year in a number of cities, the Federal "cotton stamp plan" will be in full swing at the time of Cotton Week's observance. Plans are being made for working out special selling programs in those communities in cooperation with the retail merchants participating in this new measure for stepping up cotton consumption among families in restricted income groups.

The period covered by the event this year embraces 8 business days and two week-ends, instead of a calendar week.

The Cotton-Textile Institute, in sponsoring Cotton Week's observance in behalf of the industry, will provide various promotional helps. More than 500,000 of the official posters will be distributed to satisfy the demand for display material. With a view to encouraging less emphasis on price in Cotton Week promotions, other material going to retailers—prepared in collaboration with experts in the various mer-



chandising fields involved—will cite the principal selling features of specific cotton items of timely appeal.

Evidence is already at hand that the big wholesale dry goods houses are going to make much of Cotton Week. Three of the largest distributors of this type are preparing special merchandise offerings to their retail accounts, and, in addition, providing them with appropriate selling and promotional material. America's biggest dry goods wholesaler, on the basis of its success last year, is employing on extended scale the many-sided measures effectively used in 1939.

Through the medium of the Cotton Consumption Council—meeting in New Orleans this month—coordination of all promotional activities on the part of the chains, the larger department stores, and the wholesale distributors is being effected. John P. Nichols, managing director of the Institute of Distribution, has enlisted the active participation in Cotton Week of 130 non-grocery chains in the dry goods and variety store fields. These companies—with aggregate sales of cotton goods estimated at 800 million dollars annually— reported sales increases averaging about 20 per cent on cotton goods for Cotton Week last year over the same period in 1938.

National Publications Interested

In addition to the direct participation to the direct participation of wholesale and retail distributing organizations, valuable assistance in focusing public attention on Cotton Week's observance will be forthcoming from various allied interests. This will be effected through advertising in newspapers and publications as well as over the airways. A number of influential women's magazines of mass circulation are also according significant recognition to Cotton Week in their April and May issues—with editorial features devoted to cottons. All these developments furnish worthwhile merchandising tie-ups for stores.

From the retailer's viewpoint, cottons this year have a much broader basis for sound Cotton Week promotions. In the case of high-fashion cottons for women's wear, the style scouts' reports from Paris relate the same interest for cottons being currently shown by the well-known Hollywood designers.

Cotton underwear for both men and women offer new angles of promotion this year. At long last, attractive lisle hose for women help heighten Cotton Week's allure to merchants. The popular form of cotton slacks and "slacks ensembles" is going to bring support to Cotton Week from new sources—men's wear shops. The availability at popular prices of domestic summer cottons for decorative and utility purposes in the home—supplanting novelties heretofore coming in limited quantities from European marts—stimulates the interest of another group of stores and departments in Cotton Week.

These developments combined account for the preparations that alert retailers are making to insure a widespread response to this year's Cotton Week slogan—"Call for Cottons When You Buy!"

Preparing Warp and Filling for Duck Looms

By John Middleton

(Article Two*)

IN THE first article of this series we indicated that the routing of the yarn through the warping, beaming and filling winding department to get the greatest efficiency from the machines in this department is a most important consideration. A system that works well in one mill might not be so good in another, yet there are certain fundamental principles that must be followed if the production of the mill is to flow smoothly through this department, which, with its counterpart in a fine goods mill, the slasher room, is often called the bottleneck of the mill.

Some of the things that we think important in this connection include adequate systems of ordering warp and filling yarn as needed, methods of storing and checking yarns on hand, reports from weave room indicating runouts and warps on the floor so that warps can be beamed in time to prevent looms waiting, a delivery sheet so that the overseer will be advised as to the condition of orders with respect to future shipments and a number of trained assistants and machine operatives to keep the yarn moving.

The product of the mill and the method of its disposition will govern to a considerable extent the methods used in this department. If the mill makes only a limited number of styles, supplying a reasonably steady demand then it may be possible to put a certain number of looms on each fabric. To keep these looms warped up and supplied with filling should be comparatively simple and should not require a very elaborate system in any department. On the other hand if the mill makes a great variety of fabrics, with orders ranging in size from one roll up, then the problem of routing the orders through the mill becomes more complicated and requires a great deal of attention. Some mills find it necessary to employ a production manager whose sole duties consist of handling the production of the mill. In smaller mills the assistant superintendent may have charge of this work. For purposes of our discussion we will assume that the mill has an output of from 200,000 to 300,000 pounds of various kinds of duck per week and that a production manager is used. Our discussion is, of course, confined to the warp and filling preparation department, except as it is tied up with the twisting room on the one hand and the weave room on the other.

*Article I appeared on page 55 of the March issue of COTTON.

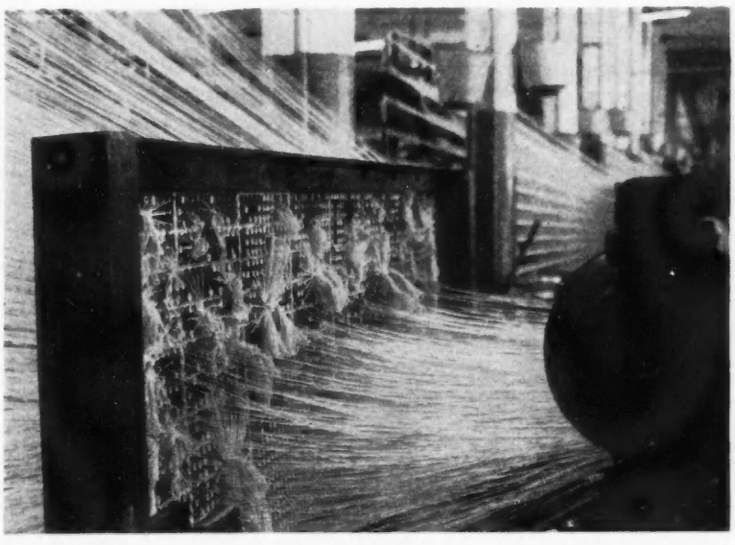


Photo by John C. Fonville of "Cotton"

Ends cut out at the eyeboard on beamer

Ordering Warp Yarns

As the warping and beaming department is charged with the duties of making the warps for the weave room, it stands to reason that this department should order from the twisting room the warp yarns to produce the warps needed by the weave room to make the fabrics required to meet deliveries. Periodically, possibly once a week, the condition of current orders should be checked, and a report made up showing the size of the order, the number of rolls beamed, the number of looms now on this fabric and the number of rolls to be delivered and dates of delivery. From this report can then be made up a production schedule, which will include the total production of the mill for a given period of time. Should there not be sufficient orders to take up the required poundage then possibly

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WARP PRODUCTION SCHEDULE

ORDER TO BEAMING ROOM

YARN -- WEEK ENDING 1/6/40

ORDER Nº	ENDS	STYLE	Nº YARN	Nº ROLLS	WARP LENGTH PER ROLL	DELIVERY DATES 1-6	1-13	1-20	1-27	TOTAL LENGTH WARP YARN
1582		50"M114		20			3	4	4	
2097		48"S29		17			1	3	5	
3125		60"Y90		8			1	2	1	
1800		37"R10		10		1	3	3	3	
2212		50"R39		9			1	2	4	
787		50"X15		12			2	2	2	
788		72"X5		5			1	1	2	

COLUMNS FILLED IN BY BEAMING OVERSEER

Such a warp production schedule as this would be made out by the production manager, who would fill out certain essential data from the order, as order number, style, number of rolls or cuts, and delivery dates. The beaming room would fill out the remainder of the data and would then order the warp yarn necessary to make this schedule

some stock goods could be made up, and orders coming in during the week can help make up the deficiency.

The card room will receive a sheet with an estimated requirement of various kinds of roving, and the overseer of the card room will make the necessary changes in his lineup to make the roving required for this schedule.

The spinning room will also receive a schedule giving the estimated amounts of the various kinds of single yarn needed by the twisting room to fill the orders for warp and filling that will be sent by the beaming department. The spinning room overseer will likewise change the necessary frames to make the production as required.

The production schedule will be handled somewhat differently in the warping, beaming and filling winding department. Single yarns may be made in excess of orders and stored in boxes or bins and used as needed. But ply yarns can not always be used so readily, so it is customary to order ply yarns as needed and to avoid the accumulation of these yarns. (Filling yarns are usually ordered from day to day and will be discussed in subsequent paragraphs.)

When the production schedule is received in the beaming department sufficient data is gathered to facilitate the ordering of the yarn. These data may include the number of ends in each fabric, the length per cut and kind of yarn. A complete check will be made of all yarns on hand, including accumulations of spliced or other reworked yarns. The stock of yarn on hand will of course be deducted from the amount needed to fill the orders. In this connection it is necessary that the person checking the stock yarn be very reliable for an error in this yarn check can be embarrassing and at the same time costly for the mill. We have known a creel to be put up only to find that 25 bobbins were needed to complete the creel. A check up would reveal that the person checking the re-worked yarn made an error. It was then necessary to take down the creel and recreel the beamer, at considerable expense and after much lost time. In this connection the same care will have to be taken in the twister room to be sure that yarn is made as requested; this is especially true of special yarns. Some system will have to be maintained in this department for this purpose with the necessary follow-up to assure its working smoothly and efficiently. An error in marking up a doff of yarn in the twister room can cause the beaming room much trouble.

Conference of Overseers

It is helpful to the person ordering the yarn (usually the overseer of the beaming department or one of his assistants) to know which warps will be needed first in the weave room so that he can request the twisting department to get on these yarns first. Sometimes a conference of the production manager, the overseers of the weaving, the beaming and the twisting departments will do much toward the solution of this problem which often means the prevention of looms waiting and deliveries missed.

After the yarn has actually been ordered it is well to have someone check the entire proceedings for possible errors in the kind of yarn, the length and the twist. The mill can ill-afford a mistake at this point.

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WARP PRODUCTION SCHEDULE

ORDER TO TWISTING ROOM

WEEK ENDING_____

YARN Nº	PLY	TWIST	BOBBINS	LENGTH	PREFERENCE	STYLE	ROLLS
6	2	Std.	1230	3800	1	M 114	20
8	3	6.50	1650	3445	2	S 29	17
10	4	Std.	1400	4805		Y 90	8
7	6	"	900	2210	Rush	R 10	10
7	6	3.00	1210	1900	Late	R 39	9
10	10	Std.	1380	2500	1	X 15	12
10	10	3.27	2000	2405	2	X 5	5

The above order to the twisting room is made up from data gathered from the warp production schedule, the beaming room records and a check of yarn on hand, and represents the net amount of yarn necessary to meet the warp production schedule

As the yarn comes from the twisting room it must be placed as conveniently as possible to the machine where it will likely be used. This is of course often not practical because of lack of space and the impossibility of determining several hours in advance just where certain yarns will be run. As the warper creels are smaller than the direct beamer creels less yarn will have to be accumulated before starting a set in the warpers than in the beamers. To promote the greatest efficiency, however, it will be found profitable to check with the twisting department before beginning a set on either machine to be sure that sufficient yarn will be ready to complete a set once it has been started. As has already been indicated the machine efficiency in this department is at the best not very high, and every effort has to be exerted to keep the efficiency from slumping.

It is also important, in this connection, to be sure that there will be sufficient empty beams on which to run the yarn when it has been creeled. Efforts have been made to work out systems for predicting loom runouts several days in advance so that warps can always be made up ready to "catch" these runouts. One such system included, with the beaming schedule, a list of the looms on which the various fabrics would be run. Because of unavoidable delays, such as breakdowns, pickouts or waiting on filling, systems of this kind are unsuccessful, so far as we know. It is, therefore, usually up to the overseer of the weaving department, in co-operation with the production manager, to determine where the different fabrics will be placed. The overseer of the warping and beaming department will submit to the weaving overseer, periodically, usually daily, a proposed beaming list, and the overseer of weaving will, in turn, furnish the list of beams for each fabric. It is up to the beaming department, however, to be sure that enough beams are available before starting a set. Failure to do this may cause as much trouble as starting a set when there is not enough yarn.

BLANK MILL

FILLING SHEET 19

Nº	PLY	TWIST	LENGTH	STYLE	WIDTH	Nº LOOMS	FILLING	YARN	STOCK ON HAND	STANDARD	AMOUNT NEEDED	AMOUNT ORDERED

Ordering Filling

In the case of mills making a very limited number of styles the filling problem is usually not very complicated, but as we are going on the assumption that a great variety of fabrics are being made, we will find the job of supplying filling to be one worthy of our attention. We are also assuming that most of the filling is to be re-wound after twisting, and will thus be run on filling winders, sometimes called quillers.

In some mills the weave room has charge of ordering the filling, but in view of the fact that the filling is to be rewound in the warping, beaming and filling winding department and because this seems the logical place to handle this we think this latter department should have complete charge of ordering and rewinding all filling. It will, of course, be necessary to have the co-operation of the weave room in this matter, as will be explained. The twisting department, too, is tied up with this program and will work with the filling winding department to keep the weave shop supplied with filling.

We think it the custom in many duck mills to regulate the weights of the fabrics by the filling. If this system is used it is not, in our opinion, a good plan to order filling very much in advance. Some mills make the filling day by day, as needed. This prevents an accumulation of filling which might be left on hand should the weights get out of line and require an immediate filling change. It will be necessary to keep a reasonable stock on hand to prevent looms waiting. Enough filling to run a loom from four to eight hours might be called reasonable.

A secondhand in a large mill might be placed in charge of the filling winders and might have the responsibility of ordering and winding the filling as needed. In a smaller mill a filling man, sometimes called a filling checker, ranking about like a section man, might be employed. In either case the man should be given full responsibility for keeping the looms supplied with the proper kind of filling, and he can do this successfully only if given full authority.

A method of ordering filling, and handling it in the filling winding department, that we would suggest, is somewhat as follows:

In the morning, after the overseer of weaving has completed his loom change report, he will furnish a copy of this report to the filling checker. The filling checker will take this report, go over his filling sheet to see if there are any new fillings going on, and to see whether it is necessary to order any extra filling before the regular time for ordering. The filling man in the twisting department might well get with the filling checker at this time for he might have twister frames that have completed orders, and this would be a good time to try to get up extra orders to keep these twisters running.

The system prevailing at the mill will determine what is to be done in the case of the new fillings. In the case of fabrics that are not well established it is usually not safe to proceed without making samples. This means holding the loom or looms until a sample has been approved, and may mean several hours delay in getting the looms started, but this is better than taking a chance by starting up with filling that is not correct and that will only make cloth that is so much out of line that it can not be used for the purpose for which it was intended. In the case of fabrics that have been made comparatively recently then it might be

safe to order enough filling to get the looms going. After the filling has been quilled, a sample can be run on the loom and if the weight is not exactly right, new filling, the correct weight, can be ordered, and the first filling made run up before starting the new filling.

Avoid Filling Accumulating

Before ordering any new filling the filling checker should check the cloth organization to be certain that the correct ply and twist is being used. As all accumulations of ply yarns must be taken care of by the warping, beaming and filling winding department, every precaution must be taken to assure the correct yarns being ordered, to avoid the accumulation of yarns that cannot be used.

With a pad of filling sheets attached to a clip board the filling checker will proceed to check the weave room, checking the looms and the amount of filling that he finds in this department. In making this check he will make note of the prospective loom changes, and will also note looms that are completing orders, to avoid ordering excess filling. Returning from the weave room he will then check all quilled filling and yarn on hand in the filling winding room. With the information that he has accumulated on this check up, and with a previously figured standard amount of filling required for each fabric, he then proceeds to order the filling required for the next period, deducting all filling on hand. This filling sheet should be complete in every detail, showing the kind of yarn and ply, the length, twist and other essential details.

When the twisting room receives this filling sheet the filling man lines up the twisters to make the yarns ordered, deducting any filling yarn that he may have on hand from the amount to be made. He can tell at a glance which fillings should be given preference and will endeavor to make these items first.

Back in the filling winding room the filling checker makes the changes at the filling winders as indicated by the check that he has just made. A certain amount of production is lost every time a change is made, but for many reasons, not the least important of which is cost, excess filling should not be wound. In some mills it has been found necessary to check the filling twice each shift. If two shifts are run then the filling checker on the first shift, who should be the head filling checker, will check the weave room in detail and will order the filling for both shifts as has already been outlined. A short time before time for changing shifts he will check all filling and yarn again so that the second shift man can make any necessary changes immediately upon starting up. The second shift man will check the filling once in about four hours after starting up, and again just before stopping time, this check being for the benefit of the first shift man. In this way each man checks all filling on hand twice each shift, making it almost impossible for any loom to wait over four hours on filling without everyone concerned knowing just where the responsibility lies.

Ordering filling

When looms are completing orders on fabrics that require special fillings, the filling checker will make careful note of these loom numbers, and will make a special order for any filling needed. It has been found a good practice to check the remaining yardage on the warps on these looms, all the yarn and filling on hand, and then to order any additional filling required to get the warps out. To facilitate this, and also for the purpose of assuring correct lengths of the rolls of special belting and other special ducks, yardage counters are often installed on the looms. If the looms have pick counters these may be used for the purpose of checking lengths if a record of the reading of the counter is made when a new roll is started on the loom. If a two- or three-shift counter is used care should be taken to record the reading for each shift.

In spite of the most careful planning or the most elaborate system there will be some accumulation of fillings in excess of requirements. Very small amounts may profitably be reeled off as waste, but any sizable amounts should be carefully stored in covered boxes, and a record of this excess filling kept at the filling checker's desk so that this filling can be used as soon as this or a similar fabric is run again.

Production Manager's Job

In order that the production manager may keep informed as to the progress of the various orders through the mill he should keep constantly in touch with the warping, beaming and filling winding department, for until the warps and the filling for a fabric have been made certainly nothing can be done about getting the fabric through the weave room. After the production schedule has been turned over to the beaming department then the production manager will check, daily, all the sets that have been beamed. This will enable him to know whether everything is coming through according to schedule, and if not he may take the necessary steps to speed up any item that may be behind schedule. He should get a copy of the filling sheet at least once each shift, so that if certain filling yarns are short, and cannot be increased immediately, then preference should be given those fabrics with earliest delivery dates. The production manager is the logical person to make suggestions in such matters.

Frequently it is necessary for the beaming department to beam certain items ahead of others to prevent looms waiting, when such waiting might delay deliveries, even though this might work to the disadvantage of the beaming department. Sets with as near the same number of ends on the same kind of beam can be run with greater efficiency than sets that require considerable changing on the beamer.

(*Continued on page* 136)

Electrical Equipment Subject of Gaston County STA

THE CARE and operation of electrical equipment in the mill was the subject of discussion at the spring meeting of the Gaston County Division of the Southern Textile Association, held in the new Boy Scout headquarters in Gastonia, N. C., on Friday evening, March 15. Nearly 100 mill men from the fine combed yarn plants of Gaston County attended the meeting, which was presided over by H. Gilmer Winget, chairman of the division, who is superintendent of the Victory and Winget plants of Textiles, Inc., in Gastonia.

An informal discussion on this important subject constituted the meeting, without a prepared program. Normally, the group discusses problems pertaining to mill processes, but the departure last month into a related field drew the attention of the men to the highly important adjunct to plant operation—the electrical equipment—and produced a discussion of stimulating interest and value.

Two guest speakers introduced the subject and conducted the discussion—Charles Bryant, of Bryant Electric Company, Gastonia, and W. J. Seibert, superintendent of the electric service shop of General Electric Company, in Atlanta.

Mr. Bryant, speaking first, called attention to the essential nature of the electrical services in a mill, pointing out that break-downs of electrical equipment are not only expensive in themselves, but produce production losses that are many times more expensive. He reviewed the points at which care and proper maintenance are essential, starting with the arrival of the current at the mill from the lines of the supplying company, and tracing it through all of the equipment involved in delivering it to the consuming machine. Cables, he said, should be of ample capacity, switches, fuses, and all other equipment must be given careful and regular maintenance. Fuse connections must be kept tight throughout, bearings properly lined and lubricated, and windings kept in good repair. Oiling of a motor, he said, is very important, "and one of the best men in a textile plant should be the oiler." A lot of oil is wasted, he said, through careless and indifferent application.

A motor is no better than its controls, he said, and if full protection is not provided, trouble will quickly develop. There should be some type of under-voltage device in the mill at some point, he said.

Practical Discussion

Answering a question from A. P. Richie, superintendent of Dixon Mills, Incorporated, Gastonia, Mr. Bryant declared that an overload device should be set about 5 per cent over the full load on the equipment. Marshall Dilling, A. M. Smyre Mfg. Co., asked what capacity would give the greatest efficiency in a motor, and Mr. Bryant said that this is achieved usually at from ¾ load to full load.

H. G. Winget, who is chairman of the Gaston County Division of the Southern Textile Association . .

Mr. Richie asked whether weather conditions would increase the "demand" charge on current, referring to a premium placed on excessive usage under a local rate. Mr. Bryant declared that if the "load" doesn't achieve "normal" within 30 minutes after starting time on Monday morning, for example, the local "demand" charge will apply; that possibly the fact that it takes until about 9:00 A. M. on Monday morning in many Gaston County mills to achieve this is due to a cooling of the machinery and equipment over the week-end. Mr. Dilling indicated that keeping the temperature in the mill up over the week-end might tend to relieve this, but Mr. Richie felt that heating alone, without forced or natural circulation resulting from machine operation, would not be particularly helpful in this connection.

Mr. Bryant discussed the matter of deterioration of insulation in motor windings, and someone asked his opinion as to the new glass insulation for motors. He declared this to be in his opinion a fine development, but does not feel it will permit the use of smaller motors or some of the other claims made for it. He declared it should be particularly helpful in dyehouse motors.

He repeated at this point that the major opportunities for a mill to conserve power lie in having cables of adequate size, proper contacts in the switches, and keeping motors properly loaded and adequately lubricated.

The speaker was asked his opinion as to the relative cost of group drive and individual drive, on spinning frames, and he said the four-frame drive is by far the most economical, from the standpoint of first cost, maintenance, and power consumption, for spinning frames; that the chief attraction for individual motor application at this point is in giving the room a better appearance.

Asked as to safety measures that have been applied to electrical equipment, Mr. Bryant indicated that progress has been made along this line, with all equipment being enclosed; and recommended the installation of a cut-out switch in connection with fuses as a safety measure. He emphasized the necessity of proper grounding of all electrical equipment, and in this connection, disapproved of the use of soldered contacts. He said that in his opinion the magnetic contactor type is the best for four-frame spinning drives, and that the choice of push-buttons or shipper handles on spinning frames is wholly a matter of personal choice.

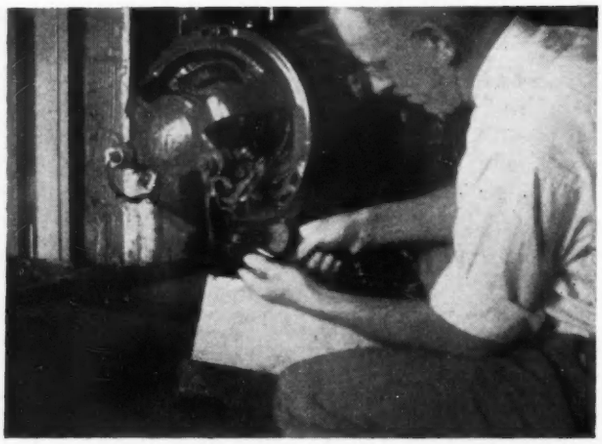
F. D. Lockman, superintendent, Monarch Mills, Lockhart, S. C., a visitor to the division, asked what means can be utilized for killing static developed from sources other than the electrical equipment. Mr. Bryant said that there is a static eliminator available at a cost of around $200 that will achieve this; that he had recently seen one doing excellent work in taking care of static in a room of approximately 90 cards.

Importance of Maintenance

Following Mr. Bryant, Mr. Seibert continued the discussion, declaring that the importance of maintenance is frequently not given adequate consideration in a manufacturing plant—that actually it is just as important a function as any part of the production schedule; that instead of being looked upon as a necessary evil, it should be recognized as a means of keeping in proper condition the machinery that turns out the production. The actual cost of a motor breakdown, he said, is really the smallest part of the expense involved, for several times the cost of the repair job itself is given up in lost production resulting from the breakdown.

A real maintenance man, he said,

Reported by Robert W. Philip



Both the megger and the tong tester (seen above) are valuable instruments to have around a textile plant to check the electrical equipment. The tong tester may be used quickly to determine flow of current through a motor, and to discover an overloaded motor . . . . . .

should have the proper attitude toward his work and toward the plant, and, whenever he sees an opportunity to avoid production losses by preventing shutdowns, should not hesitate to suggest ways and means of attaining this.

It is possible, he said, to reap inefficiency and consequent increased cost of power from under-loaded motors as well as by having the equipment overloaded. Whether or not a mill is operating under one of the "power-factor rates", he said, an under-loaded motor is uneconomical because unnecessary current is being circulated with resultant excessive heating and consequent loss; and that wattless current is expensive and useless. He urged that all motors be run at as near their rated load as possible.

In testing motors, said Mr. Seibert, a megger is good, but it doesn't tell the whole story, as there is no way of determining that any particular megger is right; however, he said, it is an excellent medium of checking a given piece of equipment at intervals for purposes of comparison on that equipment. He recommended checking motor bearings every six months by putting a feeler gauge in the air gap of the motor; and making a once-a-month routine inspection and cleaning, checking belts, pulleys, gears and couplings —as well as oil holes and the oil being used. All connections in controls should be checked at least monthly.

Mr. Seibert declared that in his work he had determined that approximately 40 per cent of all winding failures are caused by bearing failures, and urged careful attention to bearing alignment, inspection, and lubrication. He declared that lack of proper lubrication, and improper fitting, will produce most of the difficulties encountered with anti-friction bearings.

As to motor windings, he emphasized that "cleanliness is next to godliness here as elsewhere". He feels strongly that every mill should have a thermometer for testing the temperature of motors instead of relying on personal touch or "feel". Asked as to the comparative suitability of anti-friction and sleeve bearings, Mr. Seibert said he personally is partial to sleeve bearings if they are properly maintained, although he added that the other types definitely have their place. Many people, he said, try to use too heavy an oil in motors, and stated that at his shop they use ordinary weight red engine oil, with a Saybolt viscosity of between 100 and 200.

He strongly urged a systematic, thorough cleaning program for motors every two years, involving taking them down and washing with carbon tetrachloride, and varnishing the windings. Such a program, he declared, will minimize repair expense and motor breakdowns. He told of some new materials available, including wire covered with synthetic resins, new varnishes for windings, and asbestos-covered wire. He is not yet enthusiastic over the possibilities of glass covered wire, declaring that no winding is any better than its varnish, and that all varnishes do not adhere well to glass. He concluded by a description of a standard motor record card and strongly advocated the use of such a card for keeping a record of the location, performance, repair experience and cost of each motor in a plant.

Callaway Mill News

Callaway Mills, LaGrange, Ga., announced the following resignations, transfers and promotions to become effective April 1st:

W. A. Drisler of the industrial fabric division, New York office, resigned to accept position of vice-president and sales manager of the Pond Lily Co., New Haven, Conn.

Frank S. Graves has been transferred from sales manager of the Valway division to industrial fabric division in New York.

Marshall R. Abbott of the Boston office transferred to inactive duty, subject to call.

C. J. White, Jr., transferred from chief engineer in LaGrange to the industrial fabric division, New York office.

W. C. Farley transferred from consumer division to industrial fabric division, New York office.

Howard Marsh of the New York office transferred to inactive duty, subject to call.

Harold H. Barnard promoted to New York manager industrial fabric division.

Elliott Fulton of Chicago office transferred to New York office to become sales manager of the Valway division.

R. E. McTigue, formerly in LaGrange sales office, becomes personnel director of the company.

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Brad Hodges Now Represents American Paper Tube Co. on All of Their Products

American Paper Tube Co., Woonsocket, R. I., manufacturers of shuttles, paper tubes for spinning and other paper products, have announced that M. Bradford Hodges, 161 Spring St., N. W., Atlanta, Ga., southern agent for the Shambow Shuttle Division of the company, is now the sole agent for all products of the company.

◆

To Export H & B Machinery

United States Machinery Company, Inc., 115 Broad St., New York City, has organized an export and engineering department for textile machinery and have entered into an agreement with the H & B American Machine Company for the export of their machinery. United States Machinery Company, Inc., offers complete textile machinery and engineering service to all textile manufacturers, in this country and abroad. Joseph P. Mudd, factory representative of H & B, is at the present working in cooperation with the export department and is traveling in South America. V. T. Giardino is located at the home office.

Record Georgia Crowd Holds Fine Carding-Spinning Discussion

NEARLY 500 OPERATING men from Georgia, Alabama and South Carolina attended the spring meeting of the Textile Operating Executives of Georgia, at Georgia Tech, in Atlanta, Saturday morning, March 23. The subjects discussed covered carding and spinning. The meeting was in charge of J. C. Platt, agent, Chicopee (Ga.) Mfg. Corp., general chairman of the organization, who, after the invocation, introduced Harry H. Purvis, superintendent of this plant; Mr. Purvis delivered a brief address explaining the use of statistics and statistical analyses in the operation of a textile plant, outlined certain procedures for statistical examination and gave examples of statistical interpretations by use of prepared charts showing distribution of sample sizings. [Editor's Note: Mr. Purvis' address cannot be reported in detail at this time; a complete series on the statistical approach to textiles will appear in COTTON in the near future as prepared by Mr. Purvis.] In a brief business session W. R. Beldon, Clark Thread Co. of Ga., Clarkdale, Ga., was elected to the executive committee, succeeding R. P. Sweeny, Exposition Cotton Mills, Atlanta, whose term expired. The following report of the meeting incorporates as well some answers to some of the questions that were submitted, but not presented at the meeting because of lack of time.

The discussion on carding was led by J. Hal Daughdrill, general superintendent, Callaway Mills, LaGrange. The first question was, "With long draft roving *and* long draft spinning, is it necessary to add blending in the opener room?", and the chairman explained that this question was based upon the assumption that there was adequate blending previous to installing long draft. J. A. Bone, Lanett (Ala.) Division of West Point Mfg. Co., said that when he heard that his plant would install long draft, he asked the question, "What are we going to do in the opener room?", explaining that though his existing system was satisfactory for conventional draft equipment, it was not adequate from the standpoint of blending to run long draft. His present lay-out, which is satisfactory for long draft, is as follows: There are 6 hopper feeders and one waste hopper, the stock from which is fed on a delivery apron to a vertical opener. From this point the conveyor pipes split so that half of the stock goes through a section of condensers and through No. 12 lattice openers, then through a Centrif-Air machine, whereupon the conveyor pipes converge again and take all of the stock to the pickers. It will be noted from the foregoing that the stock is treated alike when going through the two sections, but only half of the stock must be worked by each section.

Reported by John C. Fonville

24 bales of stock are opened at one time, blending Middling 7/8-inch with 15/16-inch 50-50 per cent, but only the stock from four bales is fed to one hopper, which is of course blended much better in succeeding treatment. Mr. Bone also went into a discussion of other preparatory machinery, saying that it is necessary to have good carding, and especially good drawing.

Another mill has added a Gyrator section in order to get better blending. It was brought out by several men that it is absolutely essential to have good blending in order to run long draft equipment, it being further pointed out that where only the bale breaker is used, the stock from only about three bales can be blended; and if a mill has the blending feeder, besides being able to get better blends, much of the dust can be removed and there will be a cleaner opening room.

C. K. Cobb, Canton (Ga.) Cotton Mills, made changes in his opener room when installing long draft equipment and also added a large hopper feeder, 8-feet long, and can feed 8 bales in each, thereby getting a much better opening and cleaning and blending action.

The chairman, reporting for Callaway Mills, said that he found it necessary to increase the blending equipment, and as a matter of fact, his organization had included the cost of additional blending machinery in the cost of long draft equipment. He uses the Bale-Mixer and said that by the time it goes through the mixer the stock is "really blended as to staple and grade."

Allen Jones, Muscogee Mfg. Co., Columbus, Ga., has a Bale Mixer also, and told of dropping a batch of blue raw stock dyed cotton in the machine along with white cotton, adding that it took 35 minutes for all of the blue stock to get out of the machine, showing that it thoroughly blends.

It was also brought out in one report that one of the mills uses a truck in its opener room. The truck is filled with stock from 20 bales and then all of this is dumped into a hopper, which insures the mix being a full blend of all 20 bales. The use of the truck prevents the operative from taking such large armsful and throwing them into the hopper, thereby obviating the possibility of blending from more than about three bales.

Return Air; Dust Flue

The chairman called for experience with return air circulating systems on pickers to eliminate dust flue, and A. T. McElveen of Chicopee reported that at one time his plant had the vertical cabinet type of return air circulator, but discarded it in favor of a home-made affair which is easier to clean and does not have to be cleaned as often. This device can be blown off, can be cleaned from the dust house, or the operative can simply lean down and tap it and the dust falls off; the heat and humidity in the picker room remain constant as the result of the system. The dust house in this mill is quite conveniently located directly under the picker room. L. J. Duckett of Fulton Bag & Cotton Mills, Atlanta, has used a return-air circulating system for 12 years and has found it satisfactory, and as an aid in making an evener lap in maintaining the humidity in the picker room.

C. K. Cobb of Canton has the revolving type return air circulating system taking care of 9 fans, and he finds that it reduces the dust in the room, gives more uniform humidity and helps make evener laps. There is also less steam consumed in heating the picker room in winter, and less draft from the outside and other departments, which is of material assistance. Martha Mills uses a type of system also and has

discovered that it eliminates fires in the dust house and has allowed this plant to humidify the picker room, thereby giving more uniform results. Mr. Cobb also reported, upon being asked, that he has had no fires in the dust house or pickers since installing the system.

Several other mills reported satisfactory results with return air systems in the picker room, and one mill is using the revolving type on automatic spoolers, with good results. The man reporting for this mill brought out that he increased the speed on his revolving type. His comment also was that sometimes it causes little pockets in the lap when used on the picker.

Flat Grinding Machine

The next question pertained to the use of flat grinding machines in the mill. Mr. Duckett of Fulton Bag & Cotton Mills has one but does not use it now and does not recommend its use, however, Mr. Sweeny of Exposition, men from Pepperell Mfg. Co. at Lindale, and representatives of Langdale (Ala.) Mill Division of West Point Mfg. Co., are using the machine with excellent results, and think that it is a worthwhile investment for even a small mill. At Pepperell the machine is not used for grinding a complete set of flats, but is found useful in matching flats to replace those that have been damaged. Also, after having the flats clothed, every flat is tested before it is put on the card, and quite a variation is often found due to the flats being sprung in shipping. Mr. Sweeny finds the machine especially helpful in checking the flats when the chain on the card is worn, or when the chain is replaced.

At Langdale the flat grinding machine is also used on flats that have been sprung and is also helpful in squaring flats where they have been ground unevenly. It was brought out later by George Glenn, Pepperell Mfg. Co., that the machine does not replace the regular grinding period, but is supplementary to it. His machine was described as follows:

"The machine is provided with stand in which the ends of the flats rest while a sliding gauge is passed from one end of the flat to the other. The gauge has a scale graduated in .002-inch and the variation from one end of the flat to the other may be found to determine the setting of the grinding roll in matching old flats. The machine has a slide at each end that is milled to hold the flats in the proper position while grinding. Three flats may be ground at one time. The slides holding the flats have a traverse motion that passes the flats over the drum grinder. which also has a traverse motion. The machine is provided with a knock-off mechanism that may be set to grind the wire to the desired length at which time the machine stops."

The interest in this question brought up a means for gauging all flats that have to be re-clothed, and one mill man advised that when he sends a flat to the manufacturer to be re-clothed, he always sends another flat along with it so that the manufacturer will have it as a pattern.

To Increase Flat Strips

"When more flat strips are desirable, is it better to speed up the flats, or would it be better to open the setting of the front knife plate," was the fourth carding question. Reports from mills on this question are as follows:

Pepperell at Lindale: To obtain more flat strips we speed up the flats in order to keep them cleaner—thereby reducing the amount of undesirable waste going into the work. The flats make 3.34 inches per minute, or approximately one revolution in 40 minutes. The front knife plate is set to the cylinder .034-inch; back knife to the cylinder .034-inch; and at bottom .022-inch. This mill removes about 3 per cent in card strips.

J. C. Platt, agent of Chicopee Mfg. Corp., general chairman of the Textile Operating Executives of Georgia

Martha Mills at Thomaston: When more flat strips are desired we think it is much better to speed up the flats rather than back off the stripper plate. We find that when we back off the stripper plate it allows slugs and trash to go through, causing bad running work later, since the flats become so full that they will not carry the trash, etc., that it is desirable to remove.

Chicopee Mills: No experiments have been made, but it is thought better to speed the flats because this will keep more clean flats working on the cylinder.

Aragon (Ga.) Mills: I don't see why anybody would want more strips; we try to get less strips. If you want more strips, speed up the flats and close the setting of the plate.

Cedartown (Ga.) Yarn Mill: The question of card strips to be taken out is important—maybe we can pay dividends by looking into this subject, or maybe we can satisfy a customer. Much depends on the make of the card as to how strips may be removed, and much depends on the condition of the card, as we can take out more strips with new clothing than with old. On some tests that we ran especially for this report, when we speeded the flats from 2⅞-inches/min. to 3¼-inches/min., the higher speed showed more strips. Our cards can be set to take out more or less strips with the stripping plate. We found that the web was cleaner when we speeded up the flats, carding 8 pounds per hour.

Allen Jones of Muscogee asked how to get out specks when running colored work, without taking out too much good stock. L. V. Andrews of Cedartown (Ga.) Yarn Mill said that he could not answer for colored work as it has been many years since he ran it, but on white work the more strips the cleaner the web. Mr. Bone of Lanett Mills said the only way to get all of the specks out is to stop the card and pick them out, and added that the specks could be cut to a minimum by keeping the clothing sharp, cutting the production on the card and setting closer.

Drawing Frame Gears

The next question asked if the mills use uniform gears on all frames on the same grain sliver, and if numbers are controlled at the drawing. At Pepperell the weights are checked once each week, but the draft gears are not changed on the back drawing; the front drawing is sized every time a creel is put in and the draft is changed if necessary. When Martha Mills were running metallic drawing rolls the draft gears and tension gear were changed constantly, but since adopting synthetic top rolls the numbers are kept at the speeders inasmuch as it is no longer necessary to change the gears. The speeder draft gears are changed on an average of about once every 30 days, running 120 hours weekly.

Chicopee uses the same gears on all frames—there is a humidity control in this department. Mr. Sweeny, reporting for Exposition, said that when one frame's gear is changed then all frames are changed likewise. On this point, it was brought out by another man that if some of the drawing frames have been reworked, it naturally will be necessary to make allowances for the difference in running when changing gears. In other words, a new frame will not necessarily run with the same draft and tension gears as an old frame.

Henry Robinson, Columbus (Ga.) Mfg. Co., keeps uniform gears on his breaker drawing but on the finisher drawing the sliver is weighed and sometimes is changed and sometimes

not—he uses metallic rolls. Hal Daughdrill said that previously all gears were changed at one time and as the result they had trouble; in checking up, it was discovered that some of the frames had new rolls and some had old rolls; therefore these frames are treated differently now. H. Bard of Jefferson (Ga.) Mills does not change individual frames differently as it would not be long before the whole mill would be "balled up", but he does adjust all frames to take care of different stock or a change to colored stock. Mr. Bone of Lanett does not change the drawing gears, but if he did he would change all alike instead of simply changing one frame.

W. R. Beldon, Clark Thread Company, controls his numbers at the drawing frame, sizing three times in 16 hours from every delivery, and changing when necessary. He added, however, that if there is good opening and even picker laps, the necessity for many changes is small. On a show of hands, several other men present also control their numbers at the drawing, and still others control the weight at the drawing by the weight of the picker lap.

Buffing Roving Frame Rolls

The following information was given on the buffing of various types of rolls for roving frames: W. P. Dunson, American Thread Co., Dalton: Speeders using cork rolls, making 5.5 hank roving from 1 3/16-inch stock, .90 hank roving with twist multiple of .90 and 1.09 finisher roving with 1⅜-inch top roll, getting about 220 pounds per spindle between buffing period. E. E. Price, Canton (Ga.) Cotton Mills, uses cork top rolls, buffs about every three months, or about 1850 pounds per spindle between buffings; rolls set 1 11/16-inch front to middle, 2-inch middle to back; uses 15/16-inch cotton with twist multiple of 1.20 and hank roving .72.

Pepperell: We get the following life between re-buffs on our cork slubber and speeder rolls: slubbers, 3,400 pounds per spindle between buffs; speeders, 1,230 pounds.

We use 15/16-inch Middling Cotton. Slubber twist multiple (.90 H.R.) 1.22—speeder twist multiple (2.67 H.R.) 1.25—actual twist—.90 H.R. 1.16 T.P.I.—2.67 H.R. 2.04 T.P.I. Roll settings: front to second, slubbers, 1 3/16"; speeders, 1 5/32"; second to back, slubbers, 1½"; speeders, 1½".

The report from Martha Mills follows:

Slubbers	(Cork Rolls)	Lbs. per Spindle
Between Buffs	Back lines—2 yrs.	26,957
Between Buffs	Front line—4 mo.	4,147
Length of Life	Back lines—4 yrs.	53,914
Length of Life	Front Line—16 mo.	16,588

Slubbers (Koroseal): First frame put in 11 months ago has not been buffed and shows no sign of wear.

$$\frac{16{,}588 \times 11}{16} = 11{,}380 \text{ lbs per spindle to date.}$$

Speeders	(Cork Rolls)	Lbs. per Spindle
Between Buffs	Back lines—2 yrs.	3,730
Between Buffs	Front line—6 mo.	932.5
Length of Life	Back lines—4 yrs.	7,460
Length of Life	Front line—2 yrs.	3,730

$$\text{Speeders (Koroseal)} \frac{932.5}{6} \times 11 =$$

1710 lbs. per spindle to date. First frame installed 11 months ago. Has not been buffed—shows no sign of wear.

Cotton used on both slubbers and speeders is from 1 1/32" to 1¼".

	1–2	2–3
Roll setting, Slubbers	1 9/32" to 1½"	1¾" to 2"
Roll Setting, Speeders	1 7/32" to 1¾"	1 7/16" to 1¾"

Turn per inch Slubbers—From .47 to .73.
Turn per inch Speeders—From 1.60 to 2.05.

Lanett Mill, reported by Mr. Bone: Our slubber and intermediate rolls are covered with cork, and our settings are,

J. Hal Daughdrill, general superintendent of the Callaway Mills, who led the carding discussion.

front roll to second, 1¼-inch, second to back, 1⅝-inch, running ⅞-inch and 15/16-inch cotton. We make .43-hank slubber roving from a 65-grain sliver. Slubber roving has .79 turns per inch. We make 1.00 hank and 1.22 hank from .43 hank and the 1.00 hank has 1.16 turns per inch and the 1.22 hank has 1.28 turns per inch. On frames that run three shifts we find it necessary to buff the rolls about every three months, pounds per spindle per buffing 4,500 to 6,000 pounds on slubbers; on intermediates 1.00-hank and 1.22-hank from 1,650 to 1,900 pounds per buffing.

Callaway Mills, reported by A. U. Priester, Jr.: Cork rolls, .42-hank roving on slubber, .794 turns/inch, buffed every 2,800 pounds or about every two months. Rolls set 1½-inch front to middle and 1 3/16-inch second to back. Speeder rolls on cork, 2.00 hank roving, 1.72 turns/inch, buffed every 1,000 pounds or about every 5 months, rolls set 1⅛-inch front to second and 1⅜-inch second to back.

Chicopee Mfg. Corp.: Cork rolls, slubber uses twist multiple .96 and buffs every 3,770 pounds, rolls set first to second 1 3/16-inch, second to third 1½-inch. Intermediate, twist 1.29 multiple making 2.02 hank and 1.27 twist multiple making 1.55 hank, buffed every 1,242 pounds per spindle, rolls set first to second 1¼-inch and second to third 1½-inch. Cotton 1 1/32-inch throughout.

Drawing Roll Speeds

The next question asked which gives the most uniform sliver, a fast drawing roll speed or a medium speed. A. C. Link of Stark Mills, U. S. Rubber Co., Hogansville, Ga., has made tests at 120 feet per minute (252 r.p.m.) and 146 feet per minute (306 r.p.m.) using metallic drawing rolls of 1⅜-inch diameter making a 64-grain sliver. When tested for uniformity on a sliver tester the results for evenness were very close, but he found that the average maximum variation was 4 per cent less on the slower speed. Pacolet Mfg. Co., New Holland, Ga., has one-process drawing equipped with cork rolls of 1⅛-inch diameter. A test has been made at both 91 feet per minute (304 r.p.m.) and 75 feet per minute (252 r.p.m.), but no difference was noticed in the evenness of the stock; it is thought necessary to go to 150-175 feet per minute to see much variation. This was on 59-grain sliver.

W. G. Huguley, Jr., Eagle & Phenix Mills, Columbus, has made tests on 55-grain sliver with 1-inch cotton, 1¼-inch front roll, and at 98 feet per minute (300 r.p.m.) the variation was 21.6 per cent, while at 151 feet per minute (462 r.p.m.) the variation was 21 per cent. He believes that speeds within reasonable limits will have very little effect on the evenness of the sliver. Callaway Mills run drawing front rolls of 1¼-inch diameter as high as 425 r.p.m. with satisfactory results.

Another mill reported more uniform sliver with the 1⅜-inch front metallic roll at 240 feet per minute (or 504 r.p.m.) than at 180 feet per minute (or 377 r.p.m.) making a 56-grain sliver. The average variation at 180 feet per minute (377 r.p.m.) was 1.53 per cent against .995 per cent at 240 feet per minute (504 r.p.m.), the evenness being tested in the yarn (21s). At 230 r.p.m. there was 1.06 average variation and the breaking strength was satisfactory.

Pepperell Mfg. Co. has conducted tests on 1⅜-inch rolls at speeds of 110 feet per minute and 180 feet per minute and 240 feet per minute, with the following results as the averages of four processes, consisting of two processes of drawing, slubbers, and warp yarn spinning:

Speed	R.P.M.	% Avg. Variation	% Max. Variation
110 ft/min.	230	1.06	6.24
180 ft/min.	376	1.53	9.51
240 ft/min.	500	.995	6.54

Allen Jones told of running from 112

to 118 feet per minute under normal conditions, and using synthetic rolls is able to run the drawing at 130 feet per minute satisfactorily.

Spinning Discussion

The discussion on spinning was led by Julian M. Longley, American Thread Co., Dalton, Ga. The first question asked for methods of preventing lapping up on the steel and top rolls on long draft spinning when running mixed staple cotton. Ellis Whitehead of Pepperell suggested: keep the rolls clean and polished, let no oil get on the rolls, secure a good buff when using cork, maintain the proper humidity. He advised that there is more lapping-up on synthetic than on cork, and more on cork than on leather.

Martha Mills has the slip roll type of drafting, and though mixed staple is not run, the plant does run staples varying from 15/16-inch to 1¼-inch without changing the roll settings, and has no trouble with lapping up on the steel or top rolls. Representatives of Muscogee suggested that the roving traverse be set correctly and the trumpet centered with the roller cot in order to prevent lapping-up. This mill scrubs the steel rollers at intervals of 8 to 12 months and the spinners are required to keep the lint cleaned off the steel and top rollers.

Some discussion centered around the use of revolving and stationary type clearers, one man advising that the unnapped flannel keeps the rolls clean and that sheepskin revolving clearer is quite good but is most too expensive for his plant to use.

Getting back to preventing lapping-up, W. A. Pearson of Dixie Cotton Mills, LaGrange, said that the long cradle and apron will reduce the number of lap-ups. It was also stated in further discussion that the smaller the top roll and the higher the r.p.m. the greater would be the lap-ups, but good heavy flannels on the clearers and scavenger rolls would materially decrease them.

Overhead Cleaners

There was quite a variation of opinion on not only the value of overhead cleaners, but upon their application for specific jobs in the mill. J. R. Federline, of Lanett Mill, advised that his plant installed one of the first cleaners back in 1925, it being the ceiling type. The biggest trouble at that time was that the air could not be distributed properly and it caused gouts. However, after working over the creels (to prevent splinters holding the lint) and placing the roving in the center of the creel instead of on each side, the air distribution is divided equally, and by means of dampers the condition is greatly remedied. At the present this plant is experimenting with buckets over the bell of the cleaner which will automatically close the bell when the cleaner passes over space between frames and spare floor, to prevent air from fanning up the fly on the floor. Recently the mill has stopped using the bobbin cleaning machine and the spinners clean their pieces taken from the frames, thereby preventing the fanning of loose tails left on bobbins on top of the creels.

Muscogee has had experience with only the ceiling type traveling cleaners and is not satisfied with them because of the construction of the creels on the frames; it is believed that in order to secure best results the creels should be of skeleton construction to allow circulation of the air.

Pepperell has the ceiling suspended type, with two units covering 24 frames, and under the proper conditions a cleaner yarn is secured and the number of sides that a spinner may run is increased. Also, the cleaning schedule is greatly reduced, and a schedule was given to substantiate this. The company figures a 42 per cent return on the investment inasmuch as a spinner can run 25 per cent more sides on 21s warp since the cleaner has been installed.

Mr. Priester of Callaway has both types of cleaners, the ceiling and creel type, and lately has installed additional ceiling type, being thoroughly satisfied with them. His cleaners blow-off down to the ring rail but do not disturb the lint on the floor. Mr. Link was of the opinion that a fair comparison cannot be made of the two types when they travel at different speeds, but he said that the air current could be adjusted better on the creel type.

D. D. Quillian, Athens (Ga.) Mfg. Co., said that the cleaners could do both good and harm, there being many advantages, and he brought out the very pertinent point that each mill must do some research work on the adjustment of the dampers before they can suit the conditions and desires of the individual mill. His spinners run 25 per cent more sides now that the cleaners are installed.

Overhauling Spinning

The overhauling of spinning frames next came up for discussion and H. M. Jackson, Pacolet Mfg. Co., New Holland said that his plant completely overhauls the frame every 4,000 frame-hours, which included lining, levelling and plumbing of spindles. Muscogee also does the complete job every 4,000-6,000 frame hours, at that time replacing any worn parts. In between times, the rolls are scrubbed and the aprons are replaced if need be. Martha Mills lines and levels every two years; the mill is equipped with steel beams and it was brought out that it is not necessary to line and level as often here as in a mill constructed with wooden beams. [For complete overhauling schedule, see page 100 February 1940 COTTON.]

Pepperell's detailed report on overhauling follows:

We overhaul our long draft spinning frames every 4,000 frame hours. These frames spin an average counts of 15s. One overhauling crew does all lining, leveling, roll scouring, and spindle plumbing as follows:

1. Level and line roll beam and base rail.
2. Scour rolls: First wet roll with cleaning fluid (non-combustible), clean with steel wire brush, wash again with cleaning fluid, dry thoroughly. In replacing rolls, inspect for damaged flutes, worn necks and concentricity. Also inspect cap bar tips.
3. Plumb Spindles: First level ring rail, plumb spindles, replacing all worn spindles and bolsters, set thread guides, replacing worn ones.
4. Clean out head end, inspect gears and replace worn ones.
5. Clean lifter rod bushings and level weight levers.
6. Give frame a thorough cleaning in general.

Re-inforced Bobbins

Another question asked for experience with the brass shield, inside brass bushing and brass tip on filling bobbins. Several men reported that the bobbin with the outside brass shield tends to cause more ends down in spinning at doffing time, the brass shield cutting the ends. Still, another plant finds the warp bobbins equipped with the outside shield quite satisfactory, but these bobbins cannot be used on clutch spindles as the ends are cut out when the bobbin is pressed down. Pepperell is not satisfied with the inside tip bushing in the bobbin as the bushing is reported as coming loose, and the bobbins so equipped are harder to clean. Muscogee finds that the inside brass bushing for filling bobbins makes the bobbin wear longer and slip less on the spindle, but has had no experience with the brass shield or brass tip filling bobbin. Another man reported many cut fingers in the mill when the outside brass shield is used. It was brought out by one man that the shield is an advantage in weaving and a disadvantage in spinning.

In a discussion of the type roll neck the mills prefer, J. C. Edwards, Jr., master mechanic, who formerly was connected with a concern that re-works spinning rolls, advised that the company, after repeated tests, had decided

• An analysis of the attendance at the carding-spinning discussion meeting in Atlanta on March 23, reported here, discloses that there were representatives from more than 80 Georgia mills, 20 Alabama mills, and scattered attendance from mills in the Carolinas and Tennessee. In addition there was a fine attendance of men in allied trades.

The attendance of mill men was fairly well distributed among superintendents, assistant superintendents, overseers, second hands, and section men in carding and spinning, research and other staff men . . . . . .

to use only the square neck roll. George Glenn, Pepperell Mfg. Co., prefers the round neck type, particularly for front rolls. In this type of roll the male neck is .002-inch oversize to the female receiving end. The ends are pressed together with a hydraulic jack under a pressure of three tons and the male end extends two inches into the female end. Muscogee representatives expressed preference for the screw type roller neck because it does not wear away as to cause back lash in the roller; as the roller turns, it was explained, the screw joint is tightened and cannot get loose.

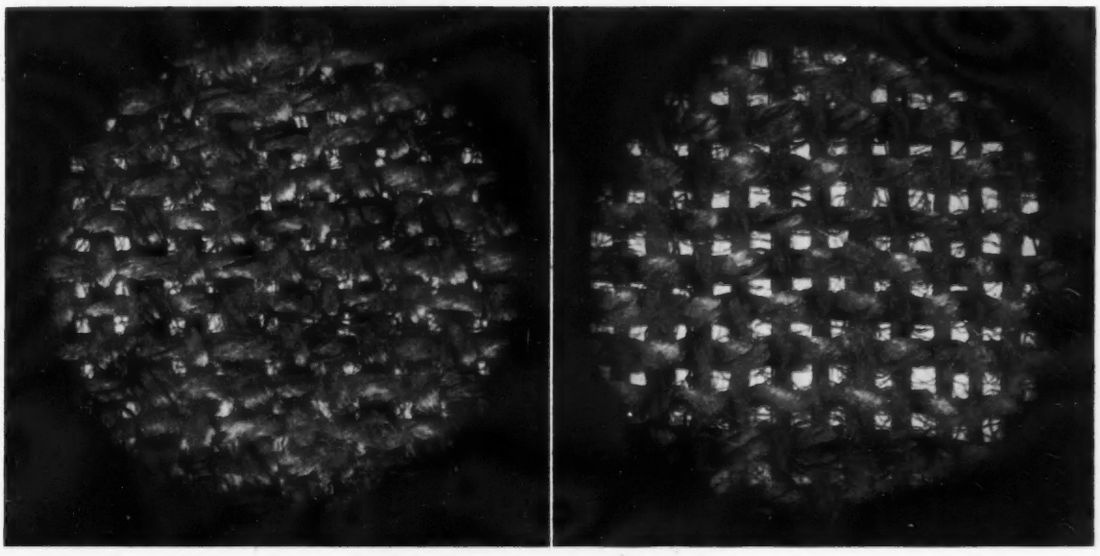
Long Draft Aprons

Experience was asked for on the various types of aprons for long draft spinning frames, and how these aprons are cut. John Hampton, Fairfax (Ala.) Mill of West Point Mfg. Co., has his aprons cut on the bias (double apron system) in order to keep the lap from coming over the cleaning bar all at one time. R. P. Hardeman of The Trion (Ga.) Company has also found that cutting on the bias at a 7-degree angle is satisfactory. He has replaced only 2½ per cent of his aprons put on in this manner since February 1937.

Pepperell Mfg. Co., with single-belt long draft uses the .035-inch bark apron cut square as the standard apron, has tried the chrome bark apron of the same thickness, and finds it just as satisfactory as the standard apron. This plant does not think the bark apron in the .045-inch thickness is practical as it is very hard to break in due to its thickness. The lap formed is too heavy and the apron seems to ride the roll. The chrome bark apron cut to .045-inch thickness seems to work slightly better than the bark apron, but not as well as the chrome type. The chrome apron gave satisfactory results and tests indicate a 50 per cent increase in life over the regular bark apron .035-inch. This plant prefers a medium soft leather since it is easier to break in and also gives a longer life. No experience has been had with bias cut aprons. Martha Mills also finds the square cut apron satisfactory if the lap is clamped together for a few minutes after it has been cemented.

Suspended Bobbin-Holders

In discussing the suspended type bobbin holder with the ball bearing instead of the regular skewer, it was reported that the spinners preferred to run more sides where the suspended holders were used than to have fewer sides and use skewers. W. R. Beldon, Clark Thread, is thoroughly satisfied with these holders and reported that the bobbin holders will effect a saving in creel cleaning and in creeling, and that, depending on the type of work, the investment in the holders could be retired in from .835 to 1.67 years. It was brought out by another man that if the humidity is too high in the spinning room the holders may choke. C. M. Moore, Swift Mfg. Co., Columbus, said that his plant does so much changing that it is cheaper to have the holders than to use skewers. In a test, he discovered that 252 bobbins could be changed in 58 minutes with the suspended holders whereas it required an hour and 15 minutes to do the same work when sticks were used. It was further brought out by another mill man that it is not necessary to add twist when changing from skewers to the suspended holders.



Rapid evaporation of moisture from the skin has long been known for its cooling effect on the body during hot summer days. To promote this effect, manufacturers have developed ways and means of increasing the porosity of fabrics so as to assure added comfort and to allow the body to breathe more freely. Above we have two photomicrographs of a fabric taken at about 25 diameters. The one on the left is a rayon dress fabric with ordinary finish, while the one on the right is the same cloth treated with a special finish to increase porosity and bring added comfort to the wearer.—Hatch Textile Research, Inc.

CURRENT TEXTILE TOPICS

Parallel with early 1937 —a notable contrast

CONDITIONS through the first quarter of 1940 were reminiscent, in some degree at least, of the same period of 1937. In March of that earlier year we said: "Conditions in any economic sphere are destined never to follow a smooth path for more than a limited period. Some new elements always crop out after a prevailing tendency for some time, such as the unbroken rise of business in the cotton industry for about six months."

That unbroken spell ended in December, 1936, and the first part of 1937 was disappointing as in the present year. The extraordinary accumulation of business last fall was concentrated in much less than six months and the lull in trading since November has been intense. Thus the pendulum has swung in regular fashion. But the recent conditions in the cotton industry have been notably different from those three years ago in other respects and the contrast is along healthy lines.

Buyers have followed their wonted practice in a dull period of holding off and bidding prices constantly under the market. They have again succeeded in getting their way to the extent of forcing prices once more below cost of production. Mill men, on the other hand, have turned quicker to the idea of curtailed operation in a period of slack demand and disappearing backlogs, although this was most noticeable in the North, where such practice now has prevailed for several years.

Buyers now ones to learn lesson

Market reports stated that sales through the first two months of the year in print cloths and related items were only about 40 to 50 per cent of the production rate. The mills were still working on the heavy 1939 backlog, however, and not accumulating stocks. Some pick-up in demand last month carried business above the rate of output for the time being, without eliminating talk of curtailment.

It was realized that consumption had been heavy and that buyers were in need of replenishment supplies, yet they hung back for low prices. Merchants were insisting that the statistical position did not warrant the low level of prices. Prices of print cloths had lost nearly all the fall gain before March and were only ⅜ cent a yard above the average of last August. A determined stand was advocated as the only way to stop depression of values and ruinous prices.

Another thing that buyers have to learn, moreover, is that mills now face conditions different from those of bygone years when it was more profitable to operate for a spell at loss levels than to shut down plants. The minimum wage law makes it impossible to secure wage adjustments which would mitigate the situation, as in the past. High taxes and other circumstances, such as limitation of credit, mean curtailment involuntarily in some cases.

Open price data reports favored

Late February brought word that print cloth manufacturers had decided favorably upon continuation of open-price reporting, in effect for several years. In fact it was urged that officials of the group, which met at Spartanburg, S. C., work to induce participation in the practice by other mills and agents. The idea behind this practice is that it prevents worse conditions that otherwise might arise (as of old) by forestalling rumors that tend to demoralization.

Maintenance of such reporting, stated in a market letter of Scheuer & Company, textile brokers and fabric originators, "is the surest way to limit the chronic extremes of textile production, of sales and of buying. It has been suggested that the unwillingness to publish statistics is based on the indifference of converters to the need of gathering and publishing figures of their operations. We are certain that, if a start is made by producers, the value of more and better statistics will be quickly felt. If in 1940 our industry advances on this front, the year is certain to be recorded as one of signal progress."

• Mary Nell Porter, Memphis debutante, chosen to be the "Maid of Cotton" in a contest sponsored by the National Cotton Council, protects her shoes in Durene shoe mittens for her 12,000-mile air tour of the United States. She will star in fashion showings in major cities throughout the country, featuring six complete cotton wardrobes.

Cue from general business tendency

In one of its March reports the New York Cotton Exchange stated that "since cotton manufacturing activity in this country tends to follow the trend of business activity in general, ideas as to the trend of business are significant." Almost concurrently the United States Department of Agriculture stated that the index numbers of cotton mill consumption and of industrial production tend to change together.

By this time the question of whether spring will mark the expected pick-up from early 1940 recession or it will be postponed to the second half of the year no doubt is discernible. At the time of writing it was still a moot question, but merchants were showing a healthy spirit in the midst of quiet conditions. Chiefly gratifying was the sustained high level of purchasing power among the consumers.

Naturally the sharp retrenchment of manufacturing operations was accompanied by shrinkage of wage earnings in the industrial centers. The downward turn was from a very high level, however, and through January the average weekly wages in 25 major industries was equal to the high point of the 1936-1937 recovery period, according to a survey of the National Industrial Conference Board. Earnings in relation to cost of living, moreover, stood 15.4 per cent higher than the average for 1929.

Well-balanced mill position

It was significant that the print cloth manufacturers in session at Spartanburg found their statistical position a healthy one after the heavy fall movement. Unfilled orders of the division were still in excess of stocks on hand at mills. Inventories were said to be lower by two to one than at any previous time during the past two years except in November and December of 1939.

This not only signified a good position for print cloths, but a better balance in demand for cotton textiles. It bears out recent statements that the concentration of business upon print cloths and other staples, so prevalent over the past decade and even through the spurts of prosperity, has been relieved by the diversion of looms to new uses in the past half year or more.

That in turn bears testimony to the well rounded economic progress since last summer, checked during the first quarter of 1940 but not changed in essence. The new demands which so diversified cotton manufacturers were due to construction activities and other industrial gains, with the heavy industries reaching peaks for a decade. Early in March, in fact, it was noted that heavy cofton goods mills were still sold up until May.

New England Mill Situation

CONSUMPTION of raw cotton by mills of New England in January is reported at 91,096 bales. This compares with 74,581 bales in 1939 and 49,865 in 1938. The average for 1933-1940 is reported by the Federal Reserve Bank of Boston at 78,178 bales and January of this year, in fact, was the highest of any first month on record except in 1937.

Cotton mills of the district in January thus were at the peak attained in the surge after the start of war abroad last September. The consumption of raw cotton reached 88,705 bales in November, dipped to 78,845 bales in December and then rose to the extreme noted. That mark is likely to stand as the peak for some time, however, in view of the recession.

Both because of slackened business in the first part of the year and the shorter month, the figures for February, not available at time of writing, are practically certain to show a decline. The policy of mills in governing operations by orders, moreover, is sure to show March behind the January peak. Reports of last month have indicated curtailment to be under way.

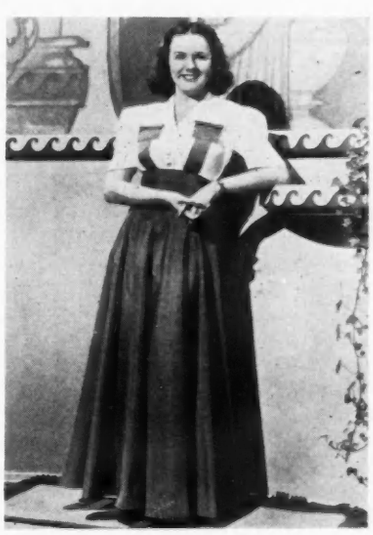
Curtailment, in fact, had already appeared in staple fine goods in February according to the March letter of the First National Bank of Boston. These are usually among the first lines to show a slowing tendency when the trend of textiles turns downward, noted the report. This authority also saw little prospect that general cotton manufacture would hold a high rate through the second quarter.

Mill men strive for stability

Reports from the goods market early in March indicated that New England mills specializing on fine combed goods had begun drastic reduction of operations. Observers were critical, however, of the secret way in which the movement began. If not secret, it was not publicly announced and the comment was that open information on curtailment would be conducive to stability.

This idea is consistent with that on the stabilizing effect of open reports on prices and publication of statistics on sales. Fine goods mills in the northern area of cotton manufacture have pursued a sound program of regulation in output. The sooner buyers know of curtailment, the quicker they will be impressed. The leaders in curtailment, moreover, may exert a healthful influence upon other mills by letting it be known what they are doing.

Of value to the whole industry should be the fact that extremes in prices under the sound policy of producers of fine goods have been lessened. Admitting that the specialized field may be less competitive than the larger business in staples, the underlying principle of regulating production to orders is the same for all. Mills not accumulating stocks can better refuse concessions and buyers have been impressed by the fact.



Courtesy, American Viscose Corp.

• **Deanna Durbin in a shirtwaist dinner dress of Crown tested rayon checked taffeta**

Rayon replaces cotton textiles

Among the latest of the re-adjustments in the great Pacific Mills organization is the dropping of cotton manufacture of cotton goods at the Cocheco division in Dover, N. H. This originally New England company has been diverting cotton manufacture to the South for some time. The latest advices on the Dover plant suggest that, while cotton manufacture will be abandoned, production of rayon fabrics may be expanded.

Extraordinary advances in rayon manufacture have not been without their serious influence upon the cotton textile industry. On the other hand, cotton mills of this northern district many years ago recognized rayon as a handmaid of the natural staple fiber from the South. They began to incorporate it with cotton for new textile effects. Recent years have found weaving mills in this district doing more than 50 per cent of the rayon weaving.

Northern Cotton Mill Notes

Improvement of the fiscal showing in leading Maine mills was recently reported for 1939, both as to net sales and results. Androscoggin Mills, Bates Manufacturing Company made an operating profit. The Hill Manufacturing Company, Edwards Manufacturing Company and York Manufacturing Company did the same. All had net losses, but the president of the five units, Walter S. Wyman, reported that most of the losses were sustained during the first half or three-quarters of the year. General expenses, local and social security taxes and depreciation made net losses against the operating profits.

The Kendall Company, with headquarters in Boston, had a net profit in 1939 of $934,043, against $98,166 in 1938. Nashawena Mills of New Bedford had a net of $84,987 for the year. The corporation spent about $100,000 for new machinery and equipment. The president, William B. Gardner, reported that taxes took more than half the profits.

Cotton mills of Rhode Island in January had payrolls 15.9 per cent higher than those a year previous. The number of man hours worked was up 9.9 per cent by the same comparison.

"THE SITUATION" as seen Across an Executive's Desk

March 18, 1940

THE TEXTILE industry is precariously balancing itself on the edge of a tightrope. It can fall off mighty easily into another abyss of complete depression such as it did in 1937 or it can remain on the tightrope and gingerly make its way to the platform of safety.

The main trouble with a nice little war boom such as we knew in the fall is that a month or two of good business persuades the textile manufacturers that the boom is a normal business and their perspective from then on is based on boom business as the "back to normalcy" millennium. The textile industry has never known such a spurt as it had in the fall, and since the first of February it has faced the realization of the normal blank period which always follows such a season.

A Look at Conditions

The first three weeks of February showed a slackening of mill activity as compared to the high pace of January. It was reported by the Department of Agriculture that factory operating rates continued to decrease but that production was still in excess of new orders. The department added that domestic mill activity is still at a comparatively high level despite decreases reported during recent weeks. The seasonally adjusted index of cotton mill activity was about 137 per cent of estimated normal for the week ended February 17, against 138 in the previous week, 147 in early January, and 123 a year ago. In trade centers there was talk of plans for further curtailment in mill consumption. Cotton spindles operated at 102.6 per cent of capacity during January, based on an activity of 80 hours a week, according to a Bureau of the Census report released last week. This compares with 100.7 in December and 85.7 in January, 1939.

Unfinished cotton cloth prices continued to sag again this week, and with cotton prices slightly higher, mill margins narrowed again. The average margin or difference between the price a pound of cotton and its cloth equivalent (17 constructions of coarse and medium fabrics) was about 12.4 cents during the first three weeks of February, against 13.4 in January and 10.0 in February, 1939. The 10-year average (1928-37) margin for February was 12.3 cents.

The first week in March, however, showed a pick-up in cotton goods when converters and industrial firms after unsuccessfully testing mills for price concessions booked small orders at current quotations. This inquiry broadened at the close of the week with substantial lots of print cloth, broad cloth, and sheetings changing hands. Prices were on a basis of 5 cents for 64x60 5.35 yard prints and 6⅝ cents for 80x80 4.00-yard prints. Print cloth demand heightened and total new orders exceeded production for that week.

Because there is some indication that general business may pick up, we are not as pessimistic about the textile situation as we could be, with falling prices on every type of cotton goods, including waste, enough to scare us out of our complacency. We can't help but wonder why the retail prices as of March 1 are found to be 3.9 per cent above those of a year ago—the eighth consecutive gain — with the prices of manufactured goods f.o.b. the mill having been cut in the three months of this year. The fact that retail prices are higher and that goods are being moved indicates a willingness on the part of the consumer to pay. Then why can we not alter our price policies to take advantage of the greater consumer income of 1940?

Curtailment in Evidence

At least we find that some mills are beginning to control their production, for Worth Street merchants who visited in the South in March found that curtailment of production among the cotton mills, principally in the print cloth division, was far greater than they had anticipated. It is also understood that many carded yarn mills which put on the third shift in the fall have had to eliminate it completely and are curtailing operations on a two-shift basis. The only group in the industry which did not add the third shift feels curtailment problems less keenly than the others; but even so, talk of reducing operation schedules is heard among some combed yarn mills.

And while this is the situation in the textile business with the chances of about 50-50 for a pick-up, if the mill policies of the fall are altered to meet the newly developed situations of the spring, or a situation similar to the middle and latter part of 1937 if those policies are not changed, we find other harassing problems facing the industry immediately and in the future.

One of these problems is that of how to pay the pan-handling farmers their annual hand-out in the form of farm bounties. It certainly is difficult to try to see through all the finagling incidental to this absurd situation.

How to Pay Off the Farmers?

First, the President of the United States and the country and Congress have gone through a period of economy talk. But when the Senate Appropriations Committee approved a $297,000,000 increase in Agriculture Department funds the economy trend came to an abrupt halt. In the opinion of some of the best advisors of the textile industry the House may refuse to grant this appropriation for parity payments and if it does, then there is a possibility that the processing tax in some form will be proposed as a means of raising funds for the farmers. In a masterly statement at the first annual Consumer Conference sponsored by the advertising women of New York, Dr. Murchison, president of the Cotton Textile Institute, said that the Certificate Plan (the processing tax by another name) would in effect put a retail sales tax of perhaps 12 per cent on all cotton products. The Certificate Plan would mean that the cotton mills would pay an additional $25 a bale for cotton or about $175,000,000 annually in addition to the actual sales price of cotton. Everyone familiar with the cotton industry knows that as the cotton changes hands going from mill to converter and finisher to wholesaler, to retailer, and, finally to consumer with markups at each step of the way the additional levy would be pyramided several times.

According to Dr. Murchison, the best computation of retail price increases due to a processing tax would be:

	%
Overalls	16
Cotton blankets	19
Bedsheets	12
Cotton mattresses (not waste)	54
Terry towels	17
Housedresses	10
Work shirts	11
Dress shirts	9
Chenille bedspreads	12
Men's socks	15

The big question facing the industry now about this whole business will be answered when and if Congress rejects or accepts the appropriation for farm parity payments as set up by the Senate Appropriations Committee.

The Case on the Wage-Hour Bill

In New Orleans on February 28 the constitutionality of the Fair Labor Standards Act was taken under ad-

visement by the United States Fifth Circuit Court of Appeals. This was the case filed by the Opp Cotton Mills and 17 other southern textile companies who contended that the wage-hour act was unconstitutional and that improper delegation of authority had been issued and that the board issuing the order establishing the 32½-cent minimum wage for the textile industry had not given due consideration to representations made in behalf of the southern mills.

The action follows issuance on October 20 of a restraining order by Judge Rufus E. Foster of the United States Circuit Court of Appeals there, in which it was ordered that the petitioners and interveners were to be exempted for the time being from the provisions of the order. Each was required to furnish bond in guarantee of payment of a minimum wage of 32½ cents should it be so ordered finally. Workers for the mills taking part in the case are receiving a minimum of 30 cents an hour now and are to be paid the difference if and when it is so ordered.

The Print-Cloth Indictment

Five South Carolina mill leaders who are charged with violating the Anti-Trust Act in connection with the 1939 program of the Print Cloth Group will have the trial date set as soon as the United States Supreme Court renders a decision on the oil companys' similar case—involving an agreement between western oil companies. The Government contends that the agreement between the print cloth mills to voluntarily control production is in itself illegal. The defendants' position has been and is now that they have been aboveboard in all the dealings connected with the program. Everyone who has any perception of the trouble which lies behind the inauguration of the program and of the program itself or the workings of the textile industry would readily grant that the object of the game was to promote trade instead of restrict trade. Also, intelligent observers are willing to grant there is one business in the country which could never be accused of monopoly and that is the textile business with its strong leanings toward cut-throat competition, over-production, and rugged individualism.

The Ridge Mills Processing Tax Case

One of the most important cases to affect the cotton textile industry in many years—certainly the most important since the Hoosac Mills case—is that now under trial: Ridge Mills, Inc., versus U. S. Government on processing tax refunds. The case opened in Charlotte, N. C., February 27, Miss Annabelle Mathews acting as Judge. After three weeks of continuous testimony given by witnesses and their cross-examinations, the trial is still in progress but was adjourned on March 1 to Washington. While only $11,000 was involved in the Ridge case, the decision of this particular case, which is the guinea pig on processing tax refunds, will affect cases involving approximately $100,000,000.

Ridge Mills, Inc., was represented by the firm of Ivins, Phillips, Graves and Barker of Washington, D. C., but other important firms handling processing taxes were present at the trial both as spectators and advisory counsellors: Miller and Chevalier; Sutherland, Tuttle and Brennan of Atlanta, Ga.; and Gardner, Morrison, Rogers and McGuire of Washington, D. C. The Government was represented by Percy Young, general counsel, who was assisted by several economists from the United States Department of Agriculture and auditors from the Bureau of Internal Revenue.

Chief witness so far has been Dr. Claudius T. Murchison, president of The Cotton Textile Institute, who has through his testimony given the most comprehensive picture of the cotton textile industry over the past 15 years ever put into a record of this sort. Speaking as an economist familiar with the problems of the industry, he outlined the ills of the industry in a superb manner and with sincerity that could not be questioned. He was on the witness stand an entire day in delivering his initial statement and was under cross-examination for two weeks. Dr. David Friday, a well known economist, was to succeed Dr. Murchison on the stand.

Courtesy, American Viscose Corp.

• Petticoat daytime dress in junior sizes made of Crown tested rayon crepe . . .

Cotton Movie

Following favorable reactions to the showing of the cotton-industry film "The Threads of a Nation," Columbia Pictures reports that bookings of this short feature are being made in such volume as to assure truly nation-wide showing of it in the course of the next year. Supplementing the intensive promotion of the film by Columbia Pictures, The Cotton-Textile Institute is notifying advertising managers and training directors of stores about advance bookings in their respective cities.

◆

Cotton Research Congress

The Cotton Research Congress will meet at Waco, Tex., during the month of June 1940. Discussions in the three-day session will revolve around the world cotton situation, production, harvesting, ginning and marketing, and new uses of the fiber and seed. The Congress is being sponsored by the state-wide cotton committee of Texas under the supervision of its section on research, of which A. B. Conner, director of Texas Experiment Station, is chairman.

◆

Pingree with Warwick

Raymond Pingree has joined the technical staff of Warwick Chemical Company, West Warwick, R. I. In the past he has been associated with Sayles Finishing Company, U. S. Finishing Company, and the Fine Chemicals Division of E. I. Du Pont de Nemours & Co., Inc.

Harold W. Rose has resigned as sales manager of Warwick and as vice-president of the Impregnole Corporation, a subsidiary of Warwick.

◆

"Rayon and Silk Trades"

Davison Publishing Company, Ridgewood, N. J., has recently published the special 45th anniversary edition of the *Davison's Rayon and Silk Trades*, which is a standard guide with the latest revised information on manufacturers, dyers, finishers, throwsters, distributors, users, statistics, technical data, machinery and supplies, and dealers in many allied lines. The deluxe office edition sells for $7.50 and the pocket edition for $5.50.

◆

Merrill Transferred to Sykes Southern Office

Warren C. Merrill, who has for some time been connected with the Boston office of Joseph Sykes Brothers Co., has been transferred to the Charlotte, N. C., office, where he will make his headquarters, covering the North Carolina and Virginia territory for the company.

COMMENT on the COTTON MARKET

New Orleans, March 16, 1940

THE GRADUAL advance in cotton values during February which carried nearby deliveries to, or slightly above the early January highs, culminated recently and thereafter the market assumed a tendency to sag, weakening as it worked lower. Sales of spot cotton were larger but this fact brought more hedging and with prices at a price where more certificated cotton could be expected to come out, the constructive side became less attractive, support was lacking, liquidation set in, causing values to tend downward.

It is rather evident now that the release of more than 2,500,000 of government surplus stocks of cotton have had the effect of causing prices to decline and at the same time relieve a previously tight spot situation. With the release of upwards of 2,000,000 bales out of the 1938 loans and around 700,000 bales out of older stocks, the urgent demand was filled or measurably relieved since prices declined over $5.00 a bale on the old crop options from the season's high and the premium on the near months and the spot basis has been reduced materially.

Further undoing of straddles from India, narrowing of the difference with Liverpool and lower prices at Bombay came at a time when export and domestic demand was small, not to mention the weakness in the March position which expired recently under the weight of a relatively heavy flood of tenders.

The domestic goods market failed to follow up the indicated improvement of the previous week, sales for the last period being below production, prices of cloth easing in consequence.

As yet there are some in the trade of an optimistic nature as regards shipments abroad and U. S. consumption, the former expected to be around 6,500,000 bales and domestic consumption probably nearly 8,000,000 bales, or a total of about 14,500,000.

The Russo-Finnish peace pact and rumors of probably early peace in central Europe tended to depress values by influencing liquidation and discouraging bullish enterprise.

Evidence of Britain's desire to buy largely of foreign growths in order to conserve American exchange, is not favorable to American trade. However, the British bought largely of U. S. cotton this season, and while they have a good stock on hand, they may be as eager buyers next season if another subsidy, which seems to be in the making, becomes a reality. Such bait, a subsidy, all countries seem to be fond of and ready to take advantage of same when possible.

Advices from Japan are to effect that a special exchange fund has been set up for the purchase of cotton. The hope is that a lot will be used to buy American cotton. Of this, however, there is no certainty at present.

A feature, looked upon as encouraging, is the contention that values have declined to or near a price where the farmer will not be able to sell his loan equity at a profit, which is likely to be reflected in lighter offerings, and may serve to give a better tone to the market unless unexpected important political developments come to the surface abroad.

Press advices from New York say in part: There has been little business of consequence from Europe, either from the belligerents or neutrals, since the first of the year. Signs of export trade picking up in the textile industry were apparent during the past week, ended March 16, and while orders were by no means substantial they were numerous enough to indicate that countries which bought large quantities of American goods in the period immediately after the outbreak of the war again are thinking seriously of placing more business here.

Preparations are generally late owing to low temperature and wet weather except in the west and Rio Grande Valley where moisture is claimed to be needed. As to the legislative program, little definite information has come out of Washington lately, but early completion of the farm bills is expected. General expectations are for full benefits and protections for the next cotton crop.

CENSUS REPORT—MARCH 14, 1940

United States— Bales—	This Season	Last Season
Consumption of lint in cotton growing States, February	566,000	475,000
Consumption of lint in New England States, February	78,000	72,000
Consumption of lint in all other States, February	19,000	15,000
Consumption of lint in United States, February	663,000	562,000
Consumption of lint in cotton growing States, 7 months	3,996,000	3,355,000
Consumption of lint in New England States, 7 months	574,000	497,000
Consumption of lint in all other States, 7 months	134,000	107,000
Consumption of lint in United States, 7 months	4,704,000	3,959,000
Mill stocks February 29	1,702,000	1,959,000
Mill stocks January 31	1,777,000	1,630,000
Stocks in public storage and at compresses Feb. 29	12,157,000	14,135,000
Stocks in mills, public storage and at compresses Feb. 29	13,934,000	15,765,000
Stocks in mills, public storage and at compresses Jan. 31	14,984,000	16,388,000
Active spindles in cotton growing States, February	17,170,000	17,090,000
Active spindles in New England States, February	5,022,000	4,819,000
Active spindles in all other States, February	612,000	624,000
Active spindles in United States, February	22,804,000	22,533,000
Active spindles in United States, January	22,872,000	22,496,000

AMERICAN COTTON

August 1 to March 15— Bales—	This Season	Last Season
Brought into sight (marketed)	12,891,000	10,018,000
Exports from the U. S. including Canada	5,246,000	2,853,000
Spinners takings, world	(*)	8,545,000

WORLD'S VISIBLE SUPPLY OF COTTON

March 15— Bales—	This Year	Last Year
Stock at all U. S. ports	2,936,000	2,427,000
Stock at 102 interior towns	3,734,000	4,258,000
Afloat to and at ports of Europe	(*)	987,000
Afloat to and at ports of Orient	386,000	196,000
Totals of American	(*)	7,818,000
Total of other kinds	(*)	2,437,000
Total of all kinds	(*)	10,255,000

(*) Not available account of war conditions.

U. S. Rayon Exports in 1939 Showed Steady Growth

Although not large in comparison with domestic consumption, exports of rayon from the United States showed a steady growth in 1939, and the dollar value and poundage of the export of this product were the largest of any year in the history of the export trade, states the *Rayon Organon*, published by the Textile Economics Bureau, Inc. The dollar value of the estimated 12,000,000 pounds of rayon items exported from the United States was $15,300,000, according to the publication. This new high record total compares with a previous peak of $11,000,000 in 1938 and a low of $2,400,000 in 1933.

The West Indies area has for many years been the largest foreign market for American-made rayon products. Cuba, for instance, which took 25 per cent of all rayon exports, was America's largest single customer. The Union of South Africa ranked second, the Philippines third, Canada fourth, and the United Kingdom fifth. Shipments to the United Kingdom in 1939 were at about the same level as in 1938, but the shipments to the other four markets rose substantially last year. The five countries mentioned accounted for 78 per cent of our total rayon exports in 1939. Four British Empire countries (United Kingdom, Canada, Australia, and the Union of South Africa) accounted for 40 per cent of the 1939 value of rayon exports from the United States.

Shipments of rayon filament yarn to domestic consumers amounted to 29,700,000 pounds in the short month of February compared with 31,400,000 pounds in January. Deliveries for the two months of 1940 totaled 61,100,000 pounds, an increase of 16 per cent compared with 52,800,000 pounds delivered during the corresponding months of 1939. Stocks of rayon yarn held by American producers totaled 8,300,000 pounds at the end of February, which compares with 7,000,000 pounds on hand as of January 31, 1940.

The Cross-Index of all articles appearing in "Cotton" during 1939 is now available to subscribers having all 1939 issues.

What the Southern Mills Are Doing

Carolina Mills, Inc., Maiden, N. C., have bought the equipment of the Cayuga Linen and Cotton Mills, Lexington, N. C., and it is understood that it will be moved to Newton, N. C., and installed in the old Catawba Cotton Mill, which is owned by the Carolina Company. When put into operation it will employ about 75 people.

A proposal has been made to the Cumberland Cooperative Company, Cumberland Homesteads, Tenn., for the establishment of a $110,000 textile plant. The mill would be a cotton spinning and knitting company, designed to employ 200 homesteaders.

Schwarzenbach Huber Company, it is reported, will build a textile plant at Luray, Va., for the manufacture of broad silks and rayons. It is understood that the first unit will be 30,000 square feet and will employ 250 workers.

Carter Fabrics Corporation, South Boston, Va., is reported to be seriously considering a 200x200-foot addition to the recently constructed new plant. The new building, if erected, is expected to be used as a finishing department.

Burlington Mills Corporation has leased the property of The Bogle-Watkins Corporation for a period of five years, and it is reported that the property will be used as a finishing plant.

Southern Bleachery and Print Works, Inc., Taylors, S. C., have made plans for a $50,000 addition; the project will consist of the addition of another floor to the bleachery division and will be used as a packing room.

Tennessee Eastman Corporation, Kingsport, Tenn., has begun work on an addition to its acetate rayon yarn plant, which will increase the capacity about 12½ per cent. The new building will be of brick, cement and glass.

E. H. Jacobs Mfg. Corp., which removed its plant to Charlotte, N. C., from Johnson City, Tenn., more than a year ago, has built its third warehouse at its plant on Dowd Road.

New York interests have leased the Stedman Manufacturing Company's building at Asheboro, N. C., and will begin the manufacture of chenille bedspreads.

Burlington Mills, Roanoke Weaving Unit, Vinton, Va., has work well under way on an addition which will have approximately 40,000 square feet of space, to house new looms.

Micolas Cotton Mills, Opp, Ala., are installing 300 new Model X looms and an Abbott winder. The spinning and roving have been converted to long draft.

Woodside Cotton Mills Company, Greenville, S. C., is reported to have installed three two-cylinder slashers, two cooking kettles and one storage kettle.

American Finishing Company, Memphis, Tenn., has announced plans for the construction of a concrete addition to the present office structure, at a cost of $12,000.

Collins & Aikman Corporation, Roxboro, N. C., have added a 100,000 square foot addition to the present plant.

Owners of the new ribbon mill in Brewton, Ala., are reported to be interested in establishing a plant at Atmore, Ala.

Kenneth Cotton Mills, Walhalla, S. C., have announced plans for a two-story addition measuring 30x75 feet, to cost $45,000 including equipment.

Belton (Tex.) Yarn Mills, it is reported, will be re-organized and re-equipped. The mill has been idle for several years.

Clearbrook Woolen Company, Inc., Winchester, Va., a new concern, is operating 16 looms in the manufacture of women's sportswear.

Anderson Press Cloth Company, Anderson, S. C., has been chartered to manufacture filter cloth. J. G. Baker is president.

Goodyear Clearwater Mills, Cedartown, Ga., No. 1 Unit, has installed additional carding machinery, and has built a new warehouse.

Monroe (Ga.) Cotton Mills have changed 85 spinning frames to Whitin long draft.

Melville Mills, Inc., Lincolnton, N. C., have recently completed installation of 1,000 additional spindles.

Oconee Mills, Inc., Westminster, S. C., will build an addition containing 15,000 square feet of floor space.

Martha Mills, Thomaston, Ga., is constructing a one-story addition.

Cotton Improvement Award

The Culloden one-variety cotton community has been chosen as the winner of the trophy awarded by the Cotton Manufacturers Association of Georgia, for having produced the best results in the Georgia cotton improvement program during the past year. Presentation of the trophy to the cotton farmers in the winning district was made by R. O. Arnold, president of the Cotton Manufacturers Association of Georgia, at exercises held at Culloden, Ga., March 27. The selection of the Culloden district as the winner of the award this year was made by officials of the State College of Agriculture, and of the U. S. Bureau of Agricultural Economics, on the basis of rules and regulations governing the statewide program, which is designed to improve the quality of Georgia cotton.

Under the One-Variety Cotton Community plan, the farmers within selected areas agree to plant only a certain variety of cotton, which, by tests and experimentation, has been determined to be best suited to local soil and climatic conditions, and to be of such a grade, staple and character as to meet the spinning requirements of the local textile mills. The cotton grown in these communities is carefully supervised during cultivation and ginning to prevent its becoming mixed with other varieties and complete records are kept with respect to fertilizer used, production costs, and yield per acre, and the cotton is scientifically classed and graded before it is marketed.

• Miss Jane Cagle displaying the award won by the Culloden community . . .

Several hundred Georgia communities have participated in this program for the past several years, and as a result the quality of Georgia cotton as a whole has been materially improved to the great advantage of the participating farmers who receive a much higher price for better grades and staple lengths.

NEW EQUIPMENT and MATERIALS

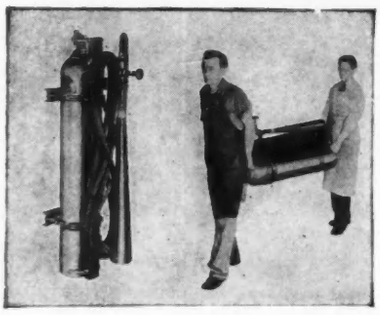
Improved Switchgear

General Electric Company, Schenectady, N. Y., has announced important design improvements and a material price reduction on MI-9 metal-clad switchgears. All buses and connections are now completely insulated; the main bus is covered with a molded insulation having a dielectric strength greatly in excess of 5000-volt rating of the equipment. All bus connections are covered with two-piece molded covers, which are filled with compound. As with previous models, silver-to-silver, high pressure contacts minimize oxidation of contact surfaces. Many other improvements are incorporated in this switchgear.

◆

Stationary-Portable Fire Fighting Equipment

C-O-Two Fire Equipment Company, 10 Empire St., Newark, N. J., has announced a new stationary-portable fire



fighting unit, which may be clamped to the wall as a fixed system installation yet easily removed and carried as a portable unit. It consists of a 50-pound size cylinder of carbon dioxide, a 50-foot length of high-pressure, reinforced flexible rubber hose, and a large discharge horn fitted with a quick-opening type valve for controlling discharge of gas from the cylinder.

◆

Linameter

The Cochrane Corporation, 17th St., and Allegheny Ave., Philadelphia, Pa., has announced a new type of meter, the Linameter, which is adapted particularly to the measurement of fluids having characteristics of viscosity, corrosiveness, and solubility such as fuel oil, ammonia, hot tar, etc. It is of the area type, with meter body installed as an integral part of the pipe line, and containing a weighted disc positioned by the velocity of fluid through a tapered throat in such a manner that the disk travel is directly proportional to flow rate. The meter is made in different combinations of indicating, recording and integrating features to suit particular conditions and may be equipped with pressure and temperature elements to record on the same chart with flow.

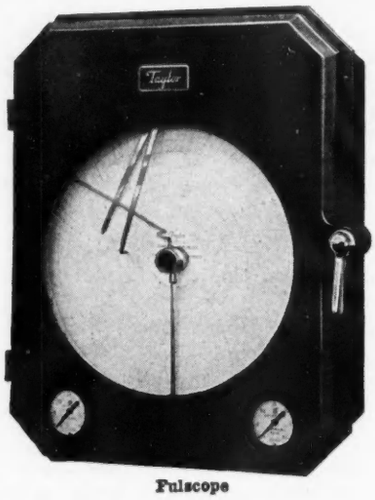
◆

Combination Starter and Motor Disconnect Switch

Cutler-Hammer, Inc., Milwaukee, Wis., has announced savings in wall space, installation time, wiring and service costs through use of the new combination across-the-line starter and motor disconnect switch for use with squirrel cage and single phase motors. Front operation allows close ganging of a number of units in compact width and height multiples. The all-in-one construction combining the starter and disconnect switch and fuses in one enclosure saves wiring and conduit work. By loosening four screws the entire control panel may be removed. Overload protection is provided and overload heater coils and operating coils are readily interchangeable.

Fulscopes

Taylor Instrument Companies, Rochester, N. Y., has announced a new line of Fulscopes that have ease of opera-



Fulscope

tion and versatility of function, said to open the door to more efficient process control in industrial plants.

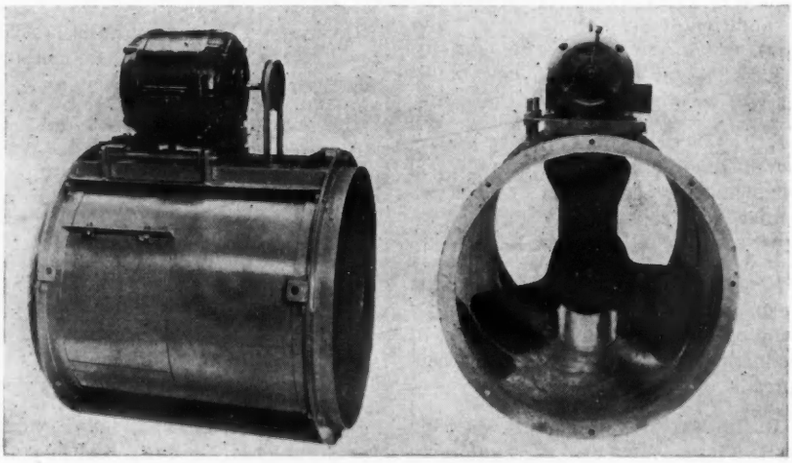
◆

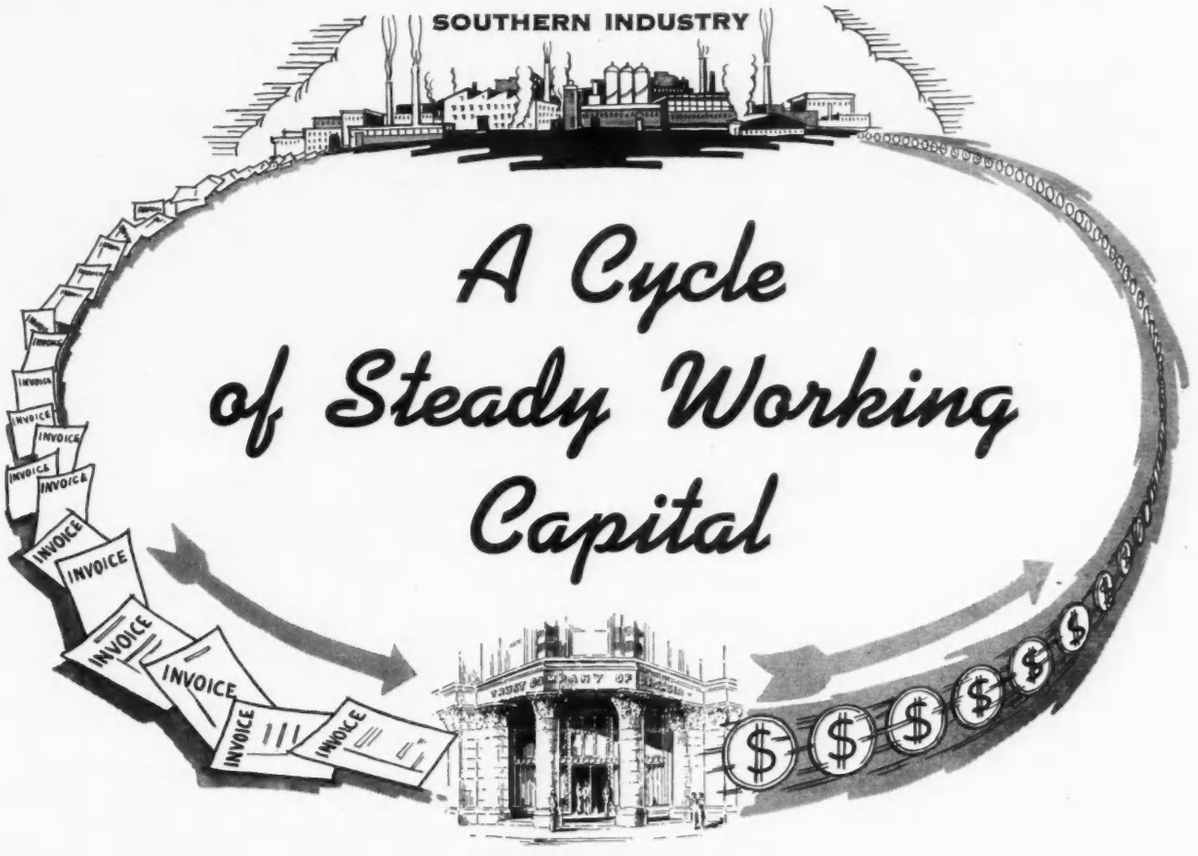
Solenoid Valve for Conditioning Control

General Electric Company, Schenectady, N. Y., has made available a new, inexpensive solenoid valve that is said to be particularly adapted to the requirements of the heating and air conditioning industry, as well as to general applications in the control of air, oil, water and gas.

Slasher Exhauster

L. J. Wing Manufacturing Company, 154 W. 14th St., New York City, have announced a new slasher exhauster which is suitable for handling air containing steam, dirt, fumes, paint spray, grease, vapors, etc. It is a companion to the company's elbow-type exhauster and is available in horizontal or vertical design with belt drive which permits selection of any fan speed to fit any condition of air volume and resistance. The new slasher exhauster is equipped with propeller fan which delivers large air volumes against duct or wind resistance. Location of motor outside the air duct keeps it clean and cool and reduces fire hazards when the air mixtures being exhausted are inflammable or explosive.





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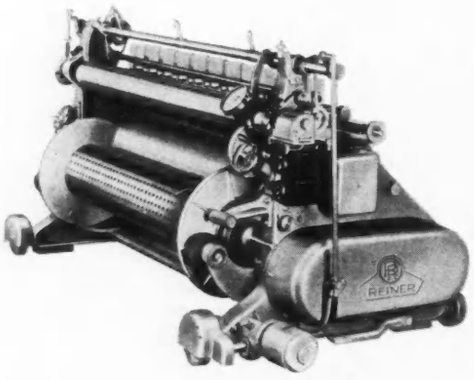


New Beaming Machine

Robert Reiner, Inc., Weehawken, N. J., has announced a new all purpose (filament and spun rayon, cotton, woolen, etc.) high speed, full width beaming machine. It has a direct beaming drive and an adjustable pressure roller, which in case of thread breakage, can be cleared away from the beam. The beam supporting mechanism permits insertion and release of the beam without any effort through the operation of a handwheel. The variable speed motor permits a warping speed from 50 to 650 yards per minute, with very low starting speed with sensitive control. The constant predetermined warping speed is maintained by a control mechanism regulated by the warp tension and works independent of the pressure roller. Measuring roller is connected with a yard counter, which automatically stops the machine after the desired beam length is obtained, while for quick stopping, the warping beam, pressure roller and measuring drum are equipped with powerful brakes which are applied at the same time. An electrically driven carriage is available to move the machine laterally in order to operate it on several beams. The machine can be built in any length and for beams up to 28 inches flange diameter.

◆

Patents Awarded

Several patents have recently been awarded in the textile field, according to Paul B. Eaton, patent attorney, Charlotte, N. C. John A. Pons, Morganton, N. C., received a patent on a method and means for looping full-fashioned hosiery in which the selvage edge and the ravel edge are placed on points and the selvage edge is guarded while the ravel edge is severed, and then the looper passes a thread through the loops of the selvage edge and the ravel edge to join the portions of the stocking together.

W. B. Hodge, Parks-Cramer Co., Charlotte, N. C., was awarded a patent relating to means for automatically stopping movement of the fans while the traveling cleaner moves from one machine to another, or if desired, while a machine is idle and being repaired.

W. W. Tripp and Russel H. Kale, Mebane, N. C., a patent relating to a truck to be used in doffing winding machines and the like in which the box in which the cones of yarn are packed is supported on an inclined support so that as the cones are placed in the box, layer by layer, the center of gravity is such as to hold the box in an inclined surface. When the box is filled, it is transported by this truck to a suitable location in the mill, where, by a trip of a lever, the box is allowed to slide to the floor of its own accord.

James W. Lewis, Spartanburg, S. C., secured a patent on a truck for transporting warp beams and cloth rolls in a cotton mill. By suitable hydraulic means the carriage of the truck is lifted above the looms in narrow alleys so that the load may pass easily.

◆

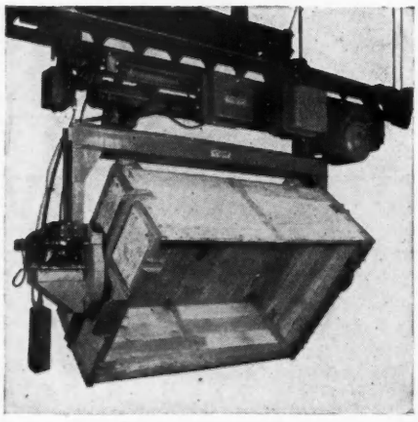
Analyzes Colors

Electrical Testing Laboratories, East End Ave. at 79th St., New York City, has announced a service for analyzing the colors going into products, assisting in standardizing them, and checking variations and drifts, all without the necessity of considering sources of light or viewing conditions. This is all done by the Spectrophotometer. Samples as small as two inches square are sufficient for testing, and charges for the service are said to be small.

◆

Grab and Carrier

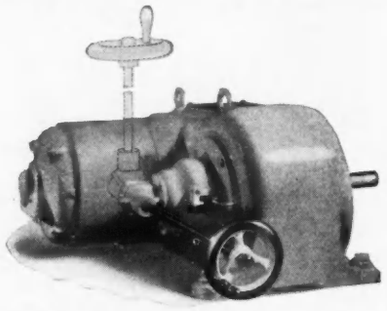
The Cleveland Tramrail Division of The Cleveland Crane & Engineering Company, Wickliffe, Ohio, has developed a new full-rotation box grab and tramrail carrier which is suitable for conveying materials in a wide range of industries. Boxes may be turned to any position by means of a gear-motor drive. If desired, a complete turn may be made. The grab is especially desirable where gradual dumping is required. The box may be raised or lowered as desired; twin hoisting unit is used. The boxes are securely clamped in position by means of a handwheel located at the end opposite the gear-motor rotating mechanism.



◆

Large Size Explosion Proof Motors

U. S. Electrical Motors, Inc., Los Angeles, Cal., have advised that large size explosion proof motors are now available. The larger motors are of the shell type frame construction and have a specially designed fan which is quiet even at high speeds.



◆

Typewriter Addressing Machine

Burroughs Adding Machine Company, Detroit, Mich., has released for sale a new typewriter addressing machine, which is said to provide maximum efficiency on work where a limited number of repeat mailings to the same names does not warrant the use of address plates or stencils. It handles pre-stuffed envelopes easily. It has the carriage return, electric platen spacing and electric capital shift.

◆

Duplex Recorder

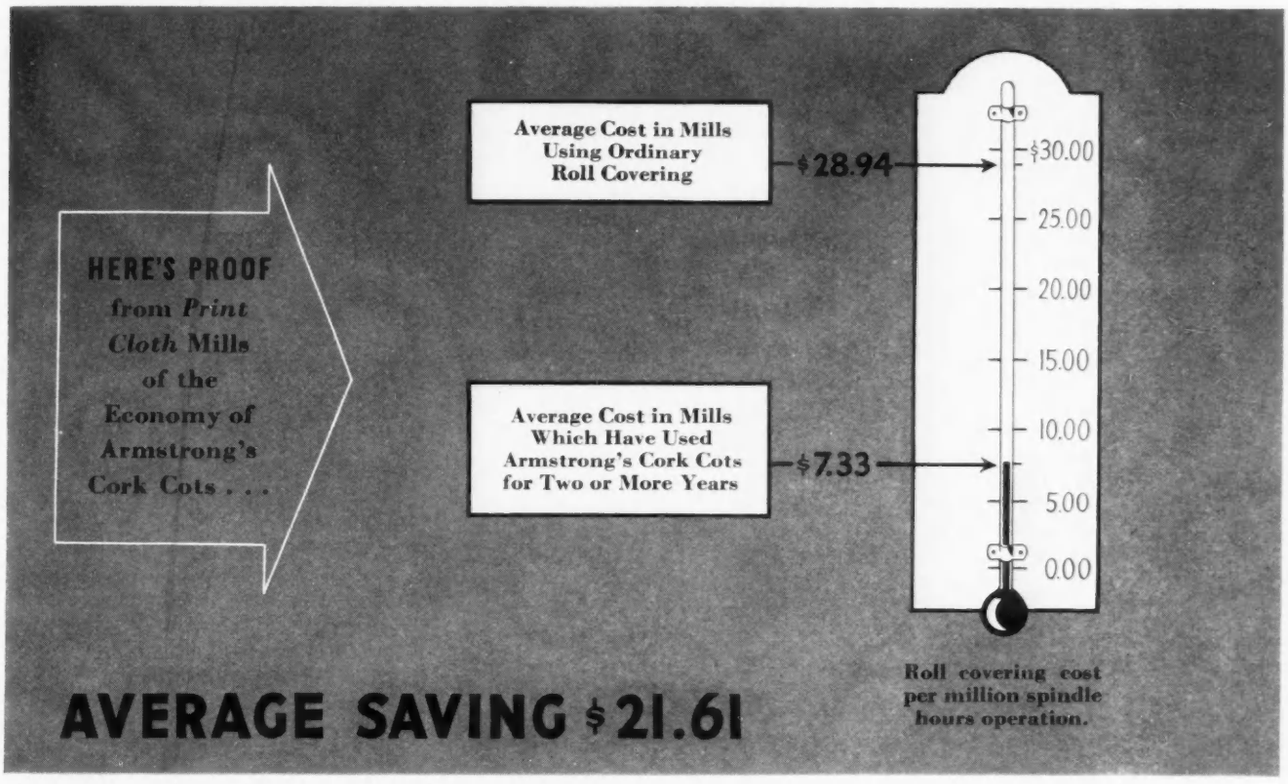
General Electric Company, Schenectady, N. Y., has developed a new duplex recorder for recording simultaneously kilowatts and rkva or kilowatts and frequency, or volts and amperes. It is expected to have a wide use wherever it is desirable to obtain synchronism between two separate recording mechanisms in a single case.

◆

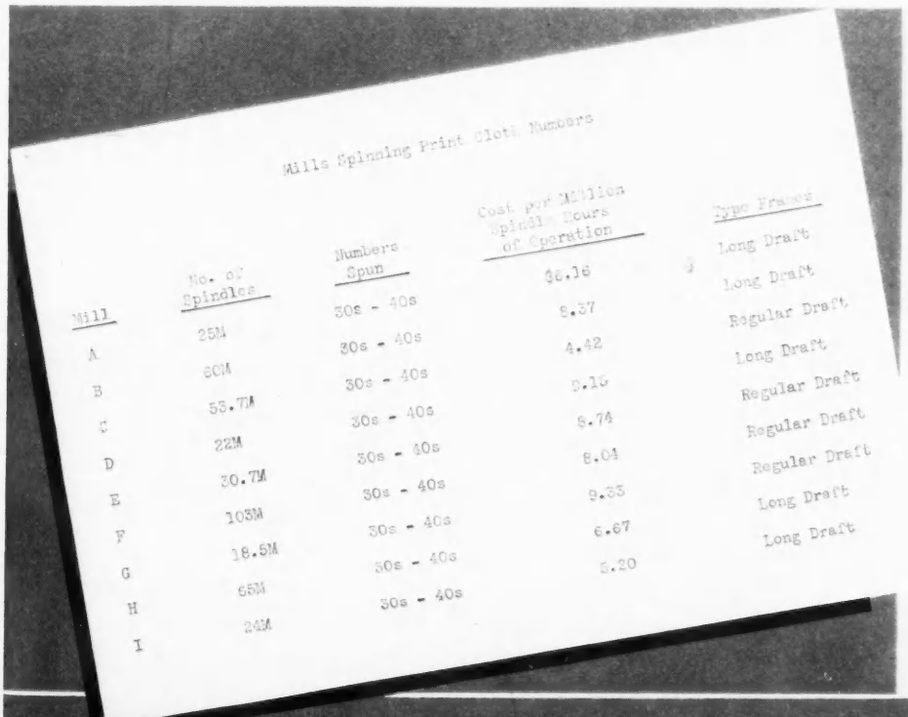
Polyform Yellow GF

E. I. du Pont de Nemours & Co., Inc., Dyestuffs Division, Wilmington, Del., have announced in a folder a new formaldehyde aftertreated direct color, Polyform Yellow GF, which dyes cotton and viscose rayon approximately the same shade. It has unusual fastness to washing and shows very good resistance to cold and salt water.

WHY MILLS TURN TO *Cork* FOR ECONOMY


HERE'S PROOF from *Print Cloth* Mills of the Economy of Armstrong's Cork Cots . . .
Average Cost in Mills Using Ordinary Roll Covering
$28.94
Average Cost in Mills Which Have Used Armstrong's Cork Cots for Two or More Years
$7.33
$30.00
25.00
20.00
15.00
10.00
5.00
0.00
Roll covering cost per million spindle hours operation.
AVERAGE SAVING $21.61

And here's a breakdown of actual roll covering costs as reported by representative mills which have been using Armstrong's Seamless Cork Cots two or more years:



Mills Spinning Print Cloth Numbers

Mill	No. of Spindles	Numbers Spun	Cost per Million Spindle Hours of Operation	Type Frames
A	25M	30s - 40s	$6.16	Long Draft
B	80M	30s - 40s	8.37	Long Draft
C	55.7M	30s - 40s	4.42	Regular Draft
D	22M	30s - 40s	9.16	Long Draft
E	30.7M	30s - 40s	8.74	Regular Draft
F	103M	30s - 40s	8.04	Regular Draft
G	18.5M	30s - 40s	9.83	Regular Draft
H	65M	30s - 40s	6.67	Long Draft
I	24M	30s - 40s	5.20	Long Draft

WHAT more convincing proof could you want on the economy of cork as a roll covering than these figures (*left*) from mills that have used Armstrong's Cork Cots for two or more years?

The initial cost of Armstrong's Cork Cots is no higher than that of other roll coverings. You *save* with quicker, cheaper assembly—longer wear—and the fact that you can rebuff these rolls three or four times at a cost of about $\frac{1}{2}¢$ per roll.

Furthermore, you can produce *better yarn* with these cots, for their higher coefficient of friction assures a stronger, more uniform product; better running work; less eyebrowing and end breakage; less clearer waste; fewer top roll laps.

An Armstrong representative will be glad to show you how *your* mill can reduce production costs and improve quality with Armstrong's Cork Cots. He will show you actual production figures of other mills. Write Armstrong Cork Company, Textile Products Section, 923 Arch St., Lancaster, Pennsylvania.

ARMSTRONG'S *Extra Cushion* SEAMLESS CORK COTS

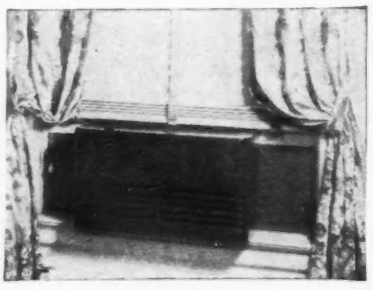
CORK PRODUCTS SINCE 1860

New Westinghouse Equipment

Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., has announced several new products.

The new Mobilaire packaged room coolers require no plumbing connections and only a few minutes for installation. They have capacities of 4,000, 6,000 and 8,500 BTU's per hour, and are particularly suited for economically cooling executive offices and rooms in homes.

The new line of wall and floor mounted air heaters are constructed to



Cooler

solve heating problems for specific applications. They are easy to install and clean.

Nofuze De-ion circuit breaker panelboards are designed particularly for use where the air is filled with chemical or acid vapors and are calibrated for use under oil. They are suitable for both indoor and outdoor mounting; the new thermal-trip breaker insures constant tripping regardless of temperature change.

To meet the requirements of synthetic fiber plants, central station auxiliaries and general industrial applications, two air circuit breakers, stationary and removable, have been announced. The improved features of the type DA draw-out units make breaker removal safe and quick.

Two improved types of oil immersion heaters are designed specifically for heating mineral oil, paraffin and alkaline cleaning solutions. The terminal boxes on these oil heaters have been changed to condulet boxes which greatly simplifies the wiring problem.

◆

G. E. Drying Lamps

General Electric Company, Schenectady, N. Y., has announced a complete line of drying lamps, designed to produce infra red (heat rays) instead of light. Use of the new lamps in a wide range of trial installations clearly shows that heat from the lamps can be used to great advantage in a variety of industrial operations, according to the company. The new line permits users to speed up process drying, expedite surface heating, and to facilitate today's trend toward straight-line continuous-flow production.

For Sizing Staple Rayon

National Oil Products Co., Harrison, N. J., has announced two new developments for the sizing of yarns of cut staple rayon, acetate and wool combinations of these yarns. Trade-named Nopco 1111 and Nopco 1227-B, both new products are non-hygroscopic softeners to be used in the sizing mixture. They are said to reduce shedding, increase flexibility and elasticity.

◆

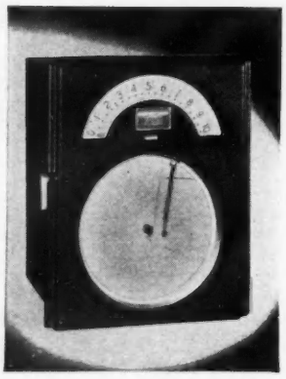
Ball Bearings for Small Shafts

Norma-Hoffmann Bearings Corporation, Stamford, Conn., has made available diminutive precision ball bearings with retainers, for very small shafts. Data sheets are available giving sizes of the bearings, which have as small a bore as one-eighth inch.

◆

Mechanical Ring-Balance Meter

Republic Flow Meters Co., Chicago, Ill., has announced a new mechanical meter of the ring-balance type for metering steam, water, gas, air, etc., at static pressures up to 1000 pounds per square inch. It will give full scale readings on differentials as low as three inches of water, which is said to be ideal for low pressure gas and air



measurement. The meter is housed in a rugged steel case suitable for exposed locations. It is easily adjusted by changing a calibrating weight, has a 12-inch evenly graduated chart, and is furnished with any combination of indicator, recorder and cyclometer type integrator.

◆

Alexander Introduces New Leather Link Belt

Alexander Brothers, Inc., 406 N. Third St., Philadelphia, Pa., has made available the Duplex leather link belt, in which each link is made from two plies of leather. The flesh or rough sides of the single links are bonded together, producing one solid link with the smooth or grain side of the leather on the outside. Because of the construction, the friction between the links and ensuing frictional heat is reduced to a minimum, according to the company. It is recommended that after long operation and the leather links show sign of wear on one side, the belt should be turned over so that the in side pulley ply is on the outside, resulting in longer life.

◆

Powell with Aridye

Clovis S. Powell, formerly superintendent of the Ware Shoals Bleachery, and for 28 years connected with that firm, has joined the Aridye Corporation. He will be connected with the Greenville, S. C., office of that organization.

◆

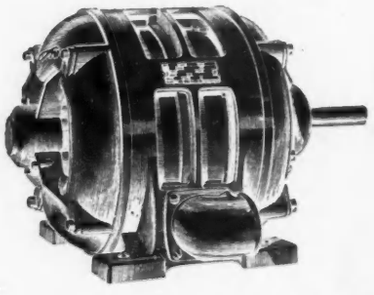
Weave-Lok

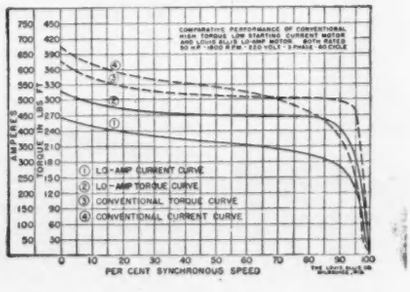
Warwick Chemical Company, West Warwick, R. I., has announced the addition of Weave-Lok, an improved slip proofing agent, to its line of chemical specialties. It is a new resin finish primarily recommended for underwear fabrics, linings and dress fabrics. It is a self-contained product, merely requiring the use of two to four per cent solution without the addition of other materials, although finishing oils may be used in combination with it. Weave-Lok imparts a soft hand without any trace of harshness or brittleness, and is said to stop pulling at the seams, prevents slipping, sagging or fraying.

◆

Lo-Amp Motor

The Louis Allis Company, Milwaukee, Wis., has announced a new Lo-Amp electric motor that is especially designed for use on refrigerating and air conditioning units. It has low locked rotor current and can be supplied with either high starting torque or normal starting torque. There are no centrifugal switches, relays, brushes or slip rings.




COMPARATIVE PERFORMANCE OF CONVENTIONAL HIGH TORQUE, LOW STARTING CURRENT MOTOR AND LOUIS ALLIS LO-AMP MOTOR BOTH RATED 50 H.P. - 850 R.P.M. - 220 VOLT - 3 PHASE - 60 CYCLE
AMPERES
TORQUE
① LO-AMP CURRENT CURVE
② LO-AMP TORQUE CURVE
③ CONVENTIONAL TORQUE CURVE
④ CONVENTIONAL CURRENT CURVE
PER CENT SYNCHRONOUS SPEED

The Equalized Ply Stresses in . . .

Condor Compensated Belts

PATENTED
TRADE MARK REGISTERED

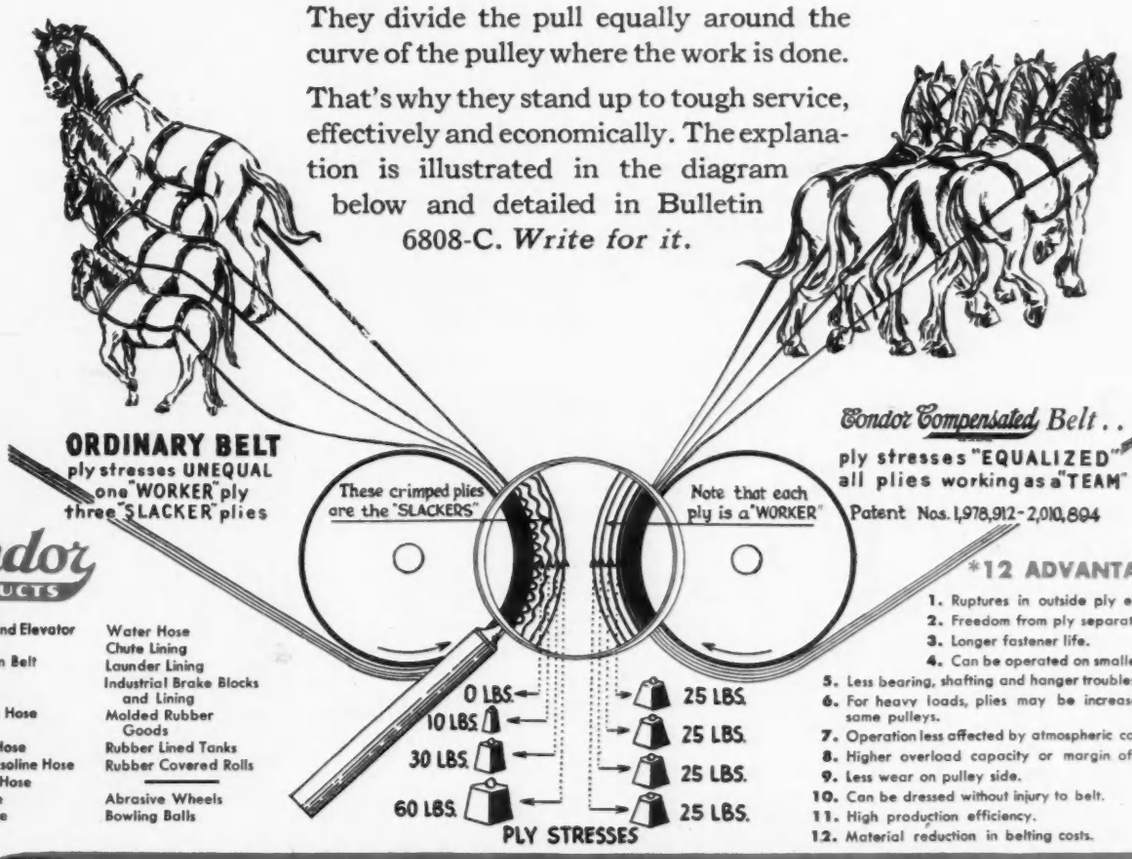
Make a Matched Team for Horsepower

THEY'RE gait-matched and strength-matched; they pull together equally, regardless of whether the load is heavy or light and regardless of whether the pulleys have large or small diameter.

There are no power ponies hitched up with power horses when you have equalized ply stresses.

They divide the pull equally around the curve of the pulley where the work is done.

That's why they stand up to tough service, effectively and economically. The explanation is illustrated in the diagram below and detailed in Bulletin 6808-C. *Write for it.*



Condor PRODUCTS

Conveyor and Elevator Belt
Transmission Belt
V-Belt
Air Hose
Contractors Hose
Fire Hose
Hydraulic Hose
Oil and Gasoline Hose
Sand Blast Hose
Steam Hose
Suction Hose
Water Hose
Chute Lining
Launder Lining
Industrial Brake Blocks and Lining
Molded Rubber Goods
Rubber Lined Tanks
Rubber Covered Rolls

Abrasive Wheels
Bowling Balls

***12 ADVANTAGES**

1. Ruptures in outside ply eliminated.
2. Freedom from ply separation.
3. Longer fastener life.
4. Can be operated on smaller pulleys.
5. Less bearing, shafting and hanger troubles.
6. For heavy loads, plies may be increased with same pulleys.
7. Operation less affected by atmospheric conditions.
8. Higher overload capacity or margin of safety.
9. Less wear on pulley side.
10. Can be dressed without injury to belt.
11. High production efficiency.
12. Material reduction in belting costs.

THE MANHATTAN RUBBER MFG. DIVISION
OF RAYBESTOS-MANHATTAN, INC.
EXECUTIVE OFFICES AND FACTORIES
23 Townsend St., Passaic, N. J.

Industry agrees that this is one of the Longest Steps Forward in the History of Process Control

Taylor's new line of instruments is now ready for you!

The New Taylor Fulscope Recording Controller

All the advantages of conventional control *and* a new control effect, Pre-Act*, merged in one completely redesigned controller! . . . Versatile! . . . Adaptable! . . . Convertible from the simplest to the most complete controller by merely adding unit assemblies! . . . Embodies outstanding new principles, new control effects achieved after years of experiment and research . . . Single duty and double duty mechanisms

IT GIVES YOU THESE 5 FORMS OF CONTROL!

Fixed High Sensitivity—for on-and-off control where there are small time lags, large capacities, regardless of load changes.

Adjustable Sensitivity—for throttling control on applications with a wide range of time lags and capacities, where there are infrequent or minor load changes.

Adjustable Sensitivity with Automatic Reset (in same case) for precision control on applications with a wide range of time lags and capacities and gradual, sustained load changes.

***Adjustable Sensitivity with Pre-Act,** Taylor's new control effect based on *rate* of control-point deviation—for applications with a wide range of time lags and capacities, and sudden, momentary disturbances *without* sustained load changes.

***Adjustable Sensitivity with Automatic Reset and Pre-Act**—for ultimate precision control on applications involving a wide range of time lags and capacities *with* sudden and sustained load changes. The Fulscope Controller with all three effects can be adapted to almost any of your control problems.

Every one of these Design Features in the new Taylor Fulscope Controller

* * *

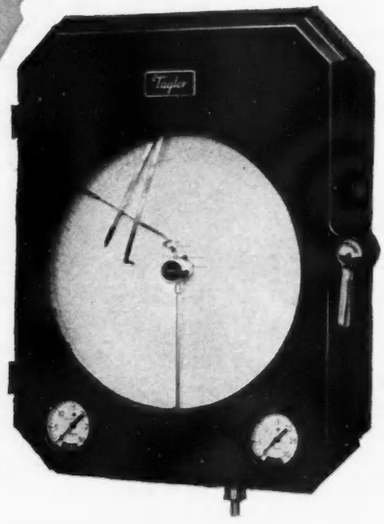
Automatic Reset (in the instrument case)—Fully and continuously adjustable over a much wider range, permitting the one correct adjustment your specific requirements demand. Simply, precisely constructed for even performance and easy maintenance.

Fully Pneumatic Sensitivity Reduction—A wider adjustment range gives you consistent performance, makes the effects of instrument friction almost negligible, automatically levels off fluctuations in air supply pressure. Pen movement and output pressure have a close linear relationship that insures better control on difficult applications. What's more, you may vary the controller sensitivity throughout the entire range, scarcely changing the output pressure or disturbing the control point.

Universal Application—Same control mechanism for temperature, pressure, rate of flow, and liquid level in recording and indicating controllers. (Temperature and pressure recording controllers are available in double-duty form.)

Quick-Change Unit Construction—No soldered joints, no screws to drop. The cases are drilled and tapped to accommodate the most complete forms of control, and to enable you to maintain easily and change from one form to another in the field.

Pre-Calibrated Actuating System—More easily interchangeable than ever.



Taylor TEMPERATURE, FLOW and LEVEL

Magnifying Adjustment Dials—Easier to read, adjust. Calibrated in absolute units.

Easy Convertibility—From direct to reverse action.

Universal Case—Made of die-cast aluminum, for face or flush mounting.

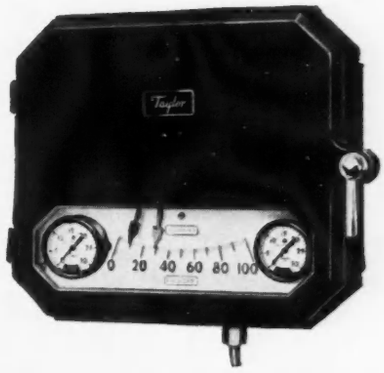
Electric Chart Clocks—Redesigned, with improved coils, oil-immersed gears, and slower-speed motors. Spring-driven clocks are an alternate. Explosion-proof electric clocks are also available.

Inbuilt Air Filters—Easy to clean, more efficient and accessible. They supplement large filter and drip well.

Quicker Chart-Changing—Separate pen lifter and hub nut eliminated.

Accessibility—Dials and knobs instantly accessible without removing chart and chart plate.

Greater Sturdiness—All vital parts of 18-8 stainless steel. Neoprene gaskets throughout.



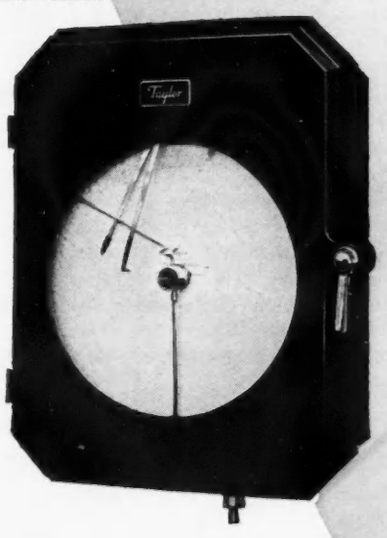
The new Taylor Fulscope Indicating Controller

. . . has the same unit construction, control mechanism, design features, and performance characteristics as the Taylor Fulscope Recording Controller, but comes in single-duty form only.

The new Taylor Recorder

Twin of Taylor Fulscope Recording Controller

. . . it contains all the fine features of the new Fulscope which are not exclusively control. Like its twin, it's an outstanding performer with significant improvements that promise all-round better results.



THE NEW TAYLOR RECORDER IS AVAILABLE IN THESE 5 FORMS NOW!

Temperature Recorders—Mercury, vapor-actuated, or gas-actuated.

Pressure Recorders—Gauge, absolute, differential, and volumetric.

Flow Recorders

Load Recorders—Tension, compression types.

Liquid Level Recorders

All these Design Features of the new Taylor Recorder are new advances

* * *

Universal Case—Made of die-cast aluminum, for face or flush mounting. Furnished standard in black, or in white finish if specified.

Easy Convertibility—All cases drilled and tapped so that various Fulscope Controller units may be added if desired. Your job of changing your instrument from a recorder into a controller is simple—no complicated fuss or bother.

Dust-proof, Moisture-proof Case—Neoprene door gaskets and improved door latch give a positive door seal. The sturdy, chromium-plated door handle has a bayonet action. Can be locked with a padlock, or cylinder type lock can be installed.

Rigid Chart Plate—This is of die-cast aluminum, permitting easier pencilled chart notations—it carries the chart clamp and pen lifter, too.

Quicker Chart-Changing—The chart-clamping mechanism combines the chart locking device and pen lifter in one unique design. You release the chart and lift the pen merely by pulling the chart knob outward—and replace the chart just as easily. It makes chart-changing a one-hand operation that takes only half as long.

Improved Actuating Units—The same strong, durable Taylor Bourdon spring has been made reversible, with a take-off lug and new sub-base. Accurate instrument calibration is now easier than ever.

Better Pen Arm Movement Assembly—The new-design spring and pen arm movement are lightweight 18-8 stainless steel, and may have an over-throw link for over-range or under-range protection. One-, two-, or three-pen combinations are available.

Electric Chart Clocks—They have been redesigned—now have improved coils, oil-immersed gears, and slower-speed motors. Spring-driven clocks are an alternate. Explosion-proof electric clocks are also available.

Simplified Tube System Replacements—The new replacements are calibrated and correctly located on the sub-base and changes in the field can be made easily and quickly.

▶ Ask the Taylor man for the whole thrilling story of these big new developments in Taylor Control. Find out what they can save *you*. Or write Taylor Instrument Companies, Rochester, N.Y. Plant also in Toronto, Canada. Manufacturers in Great Britain: Short & Mason, Ltd., London, England.

INSTRUMENTS . . . Indicating • Recording • Controlling

Paraffin Wax Emulsifier

National Oil Products Company, Harrison, N. J., has developed a paraffin wax emulsifier for use in all processes and products where wax is needed, named NOPCO 2251. It is a heavy, tan colored paste that is mixed with paraffin wax to make the wax water dispersible or emulsifiable. It is said to produce a stabilized emulsion spontaneously and without the application of energy in the form of rapid agitation or shearing effect. No special equipment is necessary.

◆

"Avisco"

In response to inquiries from textile manufacturers relative to "Avisco", the new strong staple fiber, American Viscose Corporation has made public additional technical information about this fiber. With respect to textile outlets it is stated that Avisco is being spun immediately on the cotton system and that it is being tried out in worsted and silk spinning. The question was raised as to whether this strong staple spins finer than standard staple and with less breakage in the cotton spinning process. On this point, it was explained that Avisco does not of itself spin finer than a standard staple fiber of the same size but in a fine count it gives added strength which enables the yarn to be processed into the fabric with less breaks and gives a stronger fabric.

Numerous other interesting points were brought out. Avisco, it was stated, loses a smaller percentage of strength when wet than standard staple. Furthermore, it enables spun yarns to be made with high twist. It is generally known that higher than normal twists cause a sharply decreasing tensile strength in regular spun rayon yarns. The added strength present in Avisco produces high twist yarns which are practical for mill processing and fabrication.

It is sold as open staple, in standard bales. The new strong staple is available in six types.

◆

Textile Books

A new textbook, *Textile Mathematics*, is recently off the press. The coauthors are H. H. Willis, G. H. Dunlap, E. F. Cartee and Vernette B. Moore. This book of 125 pages and some thirty illustrations presents problems based on yarn manufacturing and weave room calculations. Besides its use in textile schools it is also very suitable for use in evening classes in textile plants.

Thomas A. Campbell, Jr., and H. H. Willis of Clemson Textile School have just published *Elementary Textile Costing, Part II* and *Elementary Textile Costing, Part III*, companion texts designed to be used together. *Elementary Textile Costing, Part II* presents a typical cost system for grey goods. It is a simple but complete example of textile costing designed to serve as instructional aid and model. It has some 125 pages and 30 illustrations. *Elementary Textile Costing, Part III* is a student's work book of ninety pages containing blank forms for an independent system of textile costing; it provides the student with the actual experience of setting up and reconciling his own independent textile costing system.

Anyone interested in securing the above texts may write to H. H. Willis, Clemson, S. C., for fuller details.

TIMELY NEWS ITEMS with a TEXTILE SLANT

Greer Southern Manager for Original Bradford Soap

James A. Greer, Greenville, S. C., has been appointed southern manager for The Original Bradford Soap Works, Inc., West Warwick, R. I. Mr. Greer has for 18 years been southern manager for the "American Wool & Cotton Reporter." He will continue to make his home in Greenville, S. C., and will have an office and warehouse there for the convenience in handling the products of the company he now represents.

Mr. Greer

◆

Piedmont AATCC Announces Meetings for Year

The spring meeting of the Piedmont Section of the American Association of Textile Chemists and Colorists will be held at the King Cotton Hotel, Greensboro, N. C., April 27, the summer outing will again be at the Ocean Forest Hotel Myrtle Beach, S. C., June 21-22, and the fall meeting will be at the Carolina Hotel, Pinehurst, N. C., November 2. H. E. Kiefer, Jr., Ware Shoals (S. C.) Manufacturing Company, is chairman of the section.

◆

Hygrade Expands

Hygrade Lamp Division of the Hygrade Sylvania Corporation, Salem, Mass., has leased two buildings of the United Shoe Machinery Company at Ipswich, Mass., containing 69,000 square feet of floor space, for the manufacture of Hygrade Miralume fluorescent lighting units, formerly made at the Salem plant. Demand for the fluorescent units has grown to such an extent that it has become necessary to obtain separate quarters for this branch of the business.

◆

Acquire Business

Reilly-Whiteman-Walton Company, Conshohocken, Pa., have acquired the business of H. E. Bishop Company, marketers of Windsor textile oils and processing products. H. E. Bishop, formerly associated with the U. S. Testing Company, Inc., and executive secretary of the Throwsters Research Institute, will be associated with the organization.

◆

Republic Steel Enlarges

Republic Steel Corporation, in order to meet the rapidly increasing demand for stainless steel, has placed into operation improved and greatly expanded facilities for making stainless steel at Canton and Massillon, Ohio. In celebration of the event, the plants were inspected by a large group of newspaper and trade paper editors.

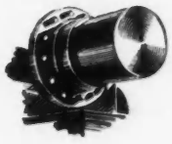
◆

Gulick Re-elected President of National Oil Products

Charles P. Gulick, one of the founders of the National Oil Products Company, Harrison, N. J., has been re-elected president of the company after a two year absence from that post. Mr. Gulick, who left the presidency in June 1938 to become chairman of the board, will also serve as board chairman. He succeeds John H. Barton, who retired as president on March 1. Other officers and directors were re-elected and in addition Richard N. Gulick and William A. Coolidge were named as directors. The stockholders approved an increase in the capital stock structure.

WASTE IS OBVIOUS HERE

. . . BUT A 25% LOSS WENT UNDETECTED HERE*



To quote the plant superintendent: "The grease formerly used on our difficult bearing lubrication job would not withstand the moisture conditions encountered. It gummed up the bearings — power costs jumped as much as $250 per month. * "On the recommendation of Tide Water engineers we changed to Tycol Green Cast Greases because of their superior lubricating properties, and their ability to resist the washing action of water. Bearings are now better lubricated and excessive power costs have been banished. And we were surprised and delighted to learn that 25% more cars may now be hauled per locomotive because of the reduction in frictional losses." » » » This operator, like hundreds of others using Tycol Green Cast Greases, gets better protection — more effective lubrication — per pound of grease. Here's the reason: Tycol Green Cast Greases are made from the finest cylinder oils available. A minimum of soap — a maximum of oil — is used. More lubricating oil per pound assures more economical lubrication. » » » Call the Tide Water representative or office for full details.

Distributors of Tycol Products in No. and So. Carolina— Heath Distributing Co., 1122 South Blvd., Charlotte, N. C.

TIDE WATER ASSOCIATED OIL COMPANY

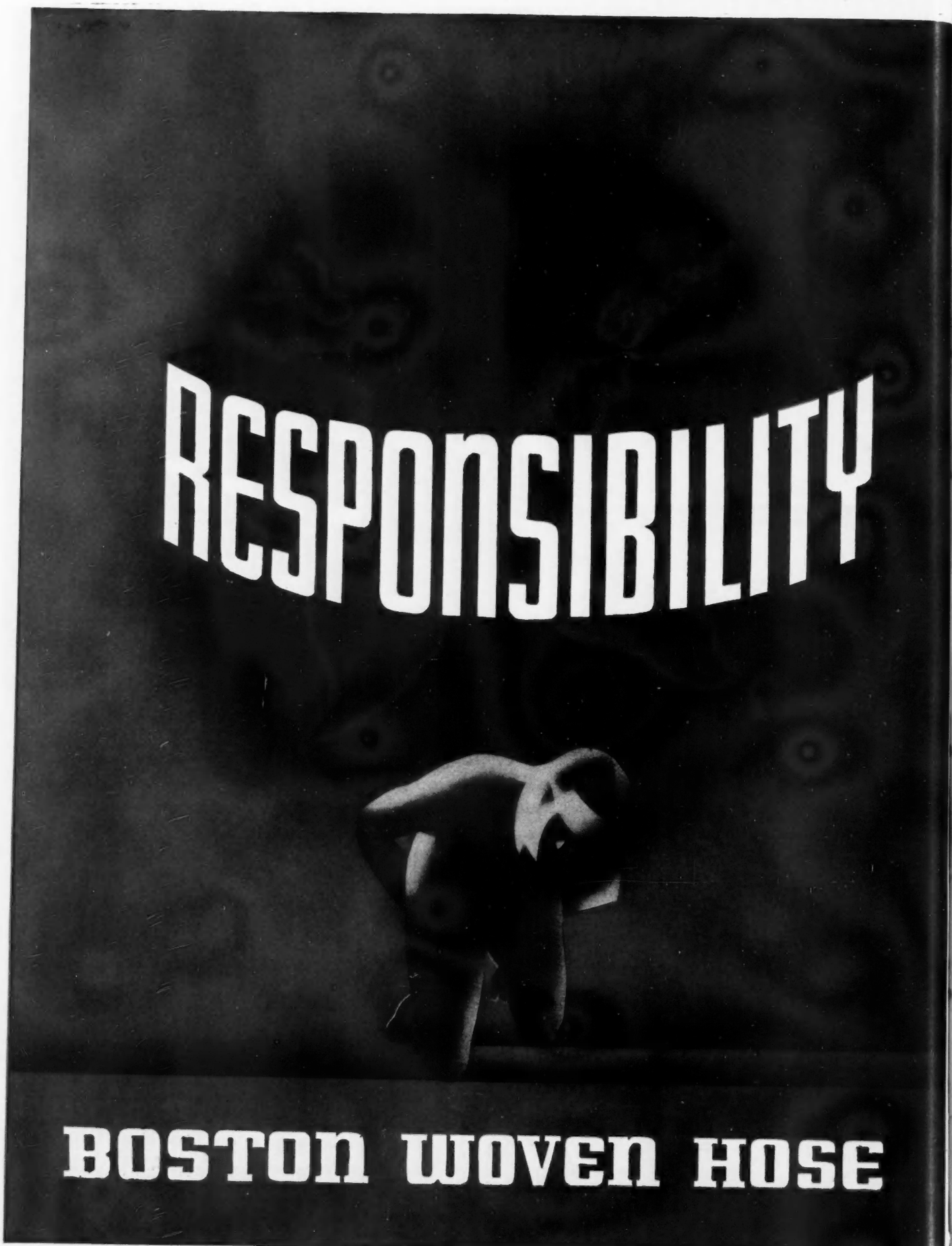
TIDE WATER DIVISION, 17 BATTERY PLACE

New York, N. Y.

INDUSTRIAL TYCOL OILS-GREASES

TIDE WATER INDUSTRIAL LUBRICANTS

THERE IS A COMPLETE LINE OF TYCOL LUBRICANTS SCIENTIFICALLY ENGINEERED FOR EVERY INDUSTRIAL USE


RESPONSIBILITY
BOSTON WOVEN HOSE

IT PAYS TO BUY BY NAME!

A product that fails to deliver what the manufacturer promises, and what the buyer has a right to expect, is a loss to both — the buyer and the seller . . . Years ago buyers tried to judge the value of rubber hose and belting by tearing the plies apart to "test the friction" . . . Today, the keen buyer chooses his source of supply intelligently and places full responsibility on the manufacturer. And that is exactly where it belongs . . . Buying Mechanical Rubber Goods on the basis of a hand test is sheer gambling. The product may have many weaknesses which remain hidden until after installation . . . B.W.H. products are "built with honor" with a knowledge of sixty-one years progressive experience behind each and every brand.

WORKS:
CAMBRIDGE, MASS., U.S.A.
POSTAL ADDRESS:
BOX 1071, BOSTON, MASS., U.S.A.

& RUBBER COMPANY

Anderson Branch Manager for Cutler-Hammer

E. K. Anderson has been appointed manager of the Dallas (Tex.) branch office of Cutler-Hammer, Inc., Milwaukee, Wis. This office serves the states of Arkansas, Texas, Oklahoma and the southern part of New Mexico. Located at 624 Santa Fe Building, the Dallas branch office is under the supervision of G. E. Booth, district manager, located at St. Louis.

◆

Webb Durham Succeeds Connor as Foster Sales Manager

T. E. Connor, sales manager of Foster Machine Company, Westfield, Mass., will retire on May 1, and will be succeeded by Webb Durham, now southern manager for the company. Mr. Durham will reside at Westfield, removing there from his present residence in LaGrange, Ga.

Mr. Connor, who is also vice-president and assistant treasurer of Foster Machine Co., will continue with the company but in a less active capacity.

Mr. Durham

The company will continue to be directly represented in a sales capacity in the South by Edward C. Connor, at the southern office, 1314 Johnston Bldg., Charlotte, N. C., and in the Atlanta territory by Fred P. Brooks, 406 South Candler St., Decatur, Ga.

Mr. Durham, whose connection in the textile industry has been mainly in the southern states and now will include the entire textile field, will continue to keep in close touch with the southern textile mills.

◆

E. E. Free Laboratories Merge with U. S. Testing

The E. E. Free Laboratories, formerly specializing in acoustics, light, electronics, vibration control and general physics, have merged with The United States Testing Company, Inc., with main offices at Hoboken, N. J. The complete equipment, staff and associates of the Free Laboratories will be maintained at their present location, 175 Fifth Ave., New York City. E. A. Graham, formerly associated with Dr. Free, will manage the laboratories, which will be known as the engineering and research division of the Testing company.

◆

Bartholomew Heads Fletcher

Robert J. Bartholomew has been elected president of Fletcher Works, Philadelphia, Pa., succeeding Otto W. Schaum, who has been president since 1907 and who now becomes chairman of the board, retaining an active participation in the company's affairs. Mr. Bartholomew has been with the company's engineering department since 1895, and chief engineer for 25 years. He has also been secretary of the company since 1933. He is widely known as an expert on narrow fabric looms and silk and rayon throwing. W. H. Rometsch, Jr., formerly treasurer, becomes also secretary succeeding Mr. Bartholomew in this position.

Mr. Bartholomew

◆

Gaylord Package Wins Honorable Mention

The Drumpak, a new and different corrugated container, with great possibilities for wide use, has again been awarded honorable mention in the All-America package competition. This package is manufactured by Gaylord Container Corp., Jersey City, N. J.

◆

Generic Names for Rayon Fabrics

Considering the comparatively recent advent of rayon in the textile industry, there has been some confusion in attempting to describe fabrics. The names being used for rayon fabrics are in some cases the property of individual firms, and in other cases are misnomers. In order to avoid such confusion and to clarify generic names and definitions of rayon fabrics, the Committee on Generic Names for Rayon Fabrics has been formed, located at 469 Seventh Ave., New York City. Already two definitions of generic names have been selected by the committee, that of "twalle" and that of "grenai". The former is the generic name of a group of fabrics made of filament rayon, commonly known as pigment prints, pigment taffetas and French crepes of the type of 92x68 and 72x56, plain weaves made of normal twist yarns processed with a full shrunk finish. Grenai also refers to continuous filament yarns, consisting of a full twist viscose yarn and an acetate normal twist yarn combined, of the plain or novelty so-called alpaca weave.

◆

New Plant for Elastic Stop Nut

Elastic Stop Nut Corporation, Elizabeth, N. J., has recently broken ground for a new plant on Vauxhall Road, Union, N. J., a suburb of Newark. The plant will be used solely for the manufacture of the corporation's extensive line of self-locking nuts.

◆

Sandoz Chicago Office

Sandoz Chemical Works, Inc., has announced the opening of a Chicago office located at 231 La Salle St. Arthur A. Barker, resident manager, assisted by Frank G. Roux, both of whom have been associated with the Company headquarters in New York, will be in charge of the office. Technicians will supplement the staff of the office from time to time.

◆

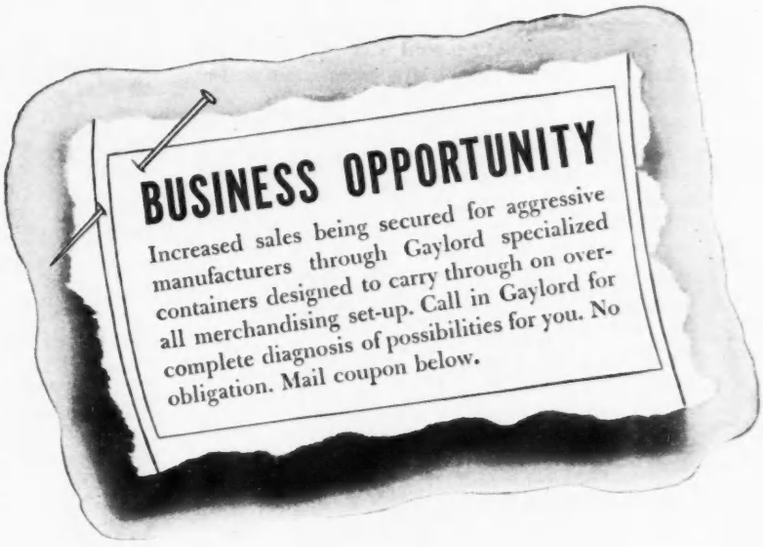
Allis-Chalmers Manager

D. S. Kerr has been appointed manager of the Atlanta office of Allis-Chalmers Manufacturing Company. Mr. Kerr is a graduate of Purdue University and has been with the company since 1922. As manager of the Atlanta office, he will have under his jurisdiction both the Chattanooga and Knoxville offices.

◆

Hospital Insurance

Hochmeyer Bros., Inc., manufacturers of corduroys, Lowell, Mass., have added hospitalization and surgical operation benefits to the provisions of their group program which since 1930 has provided employees of the concern with life insurance, now approximating $230,000, supplemented by sickness and accident benefits. The plan is being underwritten by the Metropolitan Life Insurance Company on a cooperative basis whereby the employees contribute fixed amounts and the employer bears the balance of the entire net cost. Under the rearranged plan, hospitalized employees will receive $3.00 or $6.00 a day for a period not to exceed a maximum of 31 days, while in case of surgical operations, payments ranging up to $150 will be made. The plan provides $1,000 of life insurance, and benefits of $10 a week in case of sickness or non-occupational injury. Included in the group plan is visiting nurse care and the distribution of pamphlets on health conservation and disease prevention.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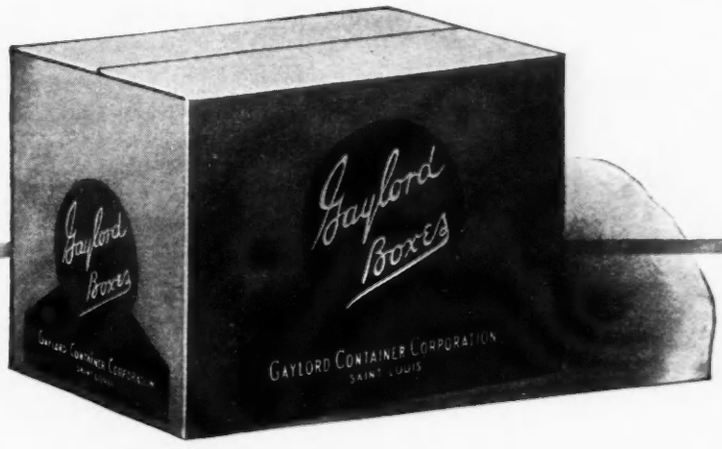

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Rayon Graduate Course

The Rhode Island School of Design, providence, R. I., has announced a new scholarship which will make possible the introduction of a graduate course covering the rayon field. The student will be given an opportunity to supplement his school work by actual training and study in the industry itself, through a cooperative arrangement to be developed. The Atlantic Rayon Scholarship of $1200 will be awarded yearly to a senior textile student who in the opinion of the committee possesses those qualities which indicate a future ability as a textile executive.

Smith Promoted at General Motors

George A. Smith, assistant plant manager of the Meriden, Conn., factory of the New Departure Division, General Motors Corporation, has been appointed assistant general manager of the Hydra-Matic Transmission Division of General Motors Corporation, Detroit, Mich. Mr. Smith came to New Departure in 1920 as foreman of machining inspection and advanced rapidly through various positions until his appointment last year as assistant plant manager.

News of Viscose Sales House

Lustre Fibres Limited, selling agents for the American Viscose Corporation, now at 200 Madison Avenue, New York, will move their sales offices on or about May 1 to the Empire State Building, 350 Fifth Avenue, New York, it is announced by W. B. Olmsted, general sales manager. It is also announced that branch sales office, situated in the New York office, has been established for the New York district. The area of the new branch office will cover Northern New Jersey and all of New York State including New York City. J. H. Hammes, formerly assistant manager of the Viscose Process Division has been appointed manager of this New York branch; he will be assisted by R. N. Semler.

Several other changes are indicated. A. C. Werner, manager of the Acetate Division, has been appointed to the newly created post of assistant general sales manager; G. L. Storm, assistant to Mr. Werner, becomes Acetate Division Manager, with J. C. Wilmerding, formerly of the Fibro Division, as his assistant. Maclean Williamson, who has been at the company's Charlotte, N. C., office, comes to New York to be assistant to W. D. Benson, manager of the Viscose Process Division.

The executive personnel of the respective divisions now is as follows: Viscose Process Division: W. D. Benson, manager; Maclean Williamson, assistant. Fibro Division: H. W. Rose, manager; W. N. Chase, assistant. Acetate Division: G. L. Storm, manager; J. C. Wilmerding, assistant. Vinyon Division: W. G. Luttge, manager.

◆

Obituary

CLAUDE W. MCSWAIN, agent in the Cotton Utilization Research Division of the U. S. Department of Agriculture since 1935, passed away suddenly of a heart attack on March 12, in Washington, D. C. He was to have been one of the section leaders in the Cotton Processing Division of the Southern Regional Research Laboratory at New Orleans, which is now under construction.

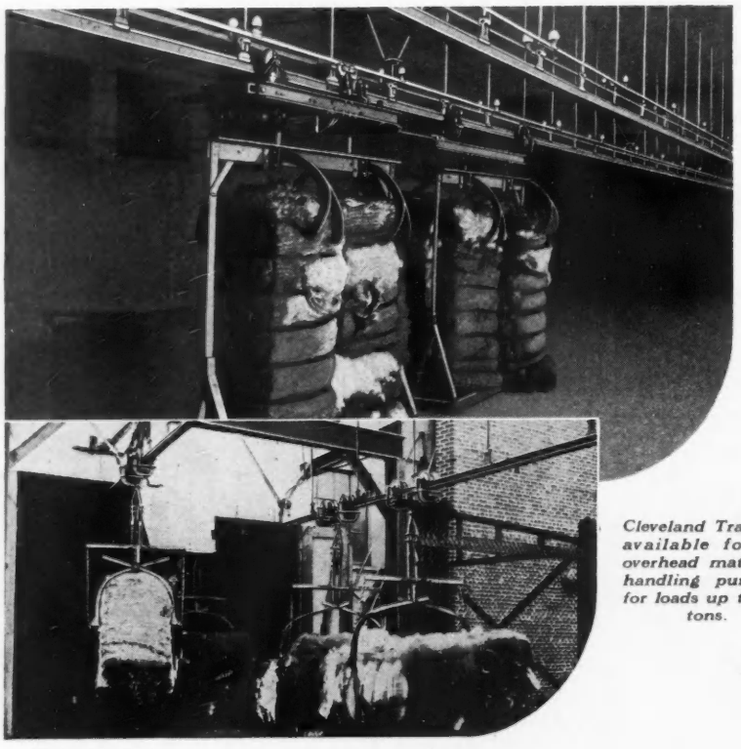
CHARLES ARTHUR WHITE, secretary-treasurer of Leeds & Northrup Company, Philadelphia, Pa., passed away March 2 after a two-week illness. He was 58 years old.

DAVID C. JONES, vice-president and general manager of The Lunkenheimer Company, Cincinnati, Ohio, passed away March 11 after a brief illness.

GEORGE W. FOGELMAN, 79, retired founder of the Burlington (N.C.) Hosiery Mill in 1891, passed away February 16 at his home in Burlington.

MATHEW CRAIG KIRKPATRICK, 53, master mechanic of the American Spinning Company, Greenville, S. C., passed away on January 21.

EDWIN M. MONSELL, 57, president of the Sand Springs (Okla.) Textile Mills, Inc., passed away recently of heart trouble.



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New Textile Publications

Calco Chemical Division of American Cyanamid Company, Bound Brook, N. J. A new shade card, with information whose extent and accuracy is said to exceed that of any previously available. Actual dyeings are shown on this card for 144 Calco wool shades plus 42 explanatory and comprehensive tables, giving fastness properties for every use for which these dyes are suitable.

The Foxboro Company, Foxboro, Mass. An illustrated folder on Stabilflo Valves. Picture of cut-a-way valve so that its actual operation may be seen.

Allis-Chalmers Manufacturing Company, Milwaukee, Wis. A revised catalog section. No. 151, introducing new horsepower ratings for multiple V-belt drives.

Republic Steel Corporation, Cleveland, Ohio. Interesting booklet for users of dyes, dealing with dyeing equipment of Enduro stainless steel.

The Hinde & Dauch Paper Company, Sandusky, Ohio. A portfolio entitled "Close-Ups of Successful Corrugated Boxes", giving a case study of various types of packages.

Calco Chemical Division of American Cyanamid Company, Bound Brook, N. J. Technical Bulletin No. 546, "Machinery Used in the Application of Dyes to Cellulosic Fibers", by Ormond W. Clark.

Hermas Machine Company, Hawthorne, N. J. "The Clothroom Spotlight", in which is given a description of the redesigned horizontal shear. Also, brief notes on causes of machinery difficulties in the cloth room.

Kali Manufacturing Company, 1410 North Front St., Philadelphia, Pa. A correlation of the results of hundreds of tests and observations of the effects of improper drying and airing. Will be helpful to all mills doing this type of work.

National Association of Manufacturers, 14 West 49th St., New York City. "Employment Regularization", a 95-page booklet giving 35 tested procedures for stabilizing employment in industry, successfully utilized in the four broad fields of production, distribution, personnel and management activity. Price, 15 cents per copy.

E. I. Du Pont de Nemours & Co., Inc., Wilmington, Del. "Emulsifying with the Fatty Alcohol Sulfates", containing a discussion of emulsions and the characteristics of Duponol alcohol sulfate emulsifying agents.

Cochrane Corporation, 17th St., and Allegheny Ave., Philadelphia, Pa. Leaflet descriptive of the new Linameters, designed to measure the flow of those fluids having characteristics of viscosity, corrosiveness, solubility, etc., which are beyond the scope of the regular orifice flow meter.

Robert Reiner, Inc., Weehawken, N. J. Literature on the new all purpose high speed, full width beaming machine.

Alexander Brothers, Inc., 406 N. Third St., Philadelphia, Pa. Booklet describing Duplex link leather belt.

General Electric Company, Schenectady, N. Y. GEA-1569B on the thrustor operated valves for pipe sizes of one to ten inches. Folder on some of the many applications of the new drying lamps for many industrial applications.

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa. Booklet of wool and worsted mill equipment, from turbines, transmission equipment, motors and controls to lighting and air conditioning units.

Booklet on indoor disconnecting switches.

Republic Flow Meters Company, 2240 Diversey Parkway, Chicago, Ill. Bulletin No. 110 describing mechanical ring-balance flow meters for steam, water, gas, air and oil pressures up to 1000 pounds.

Morse Chain Company, Ithaca, N. Y. Bulletin No. R54 giving engineering data on the roller chain. Contains information on construction, capacities and applications, and includes transmission capacity tables for pitches from ⅜-inch to 2½-inch.

New York & New Jersey Lubricant Company, 292 Madison Ave., New York City. Bulletin No. 506A, "Lubrication and Maintenance of Ball and Roller Bearings", giving the salient features in caring for anti-friction bearings, with recommendations for lubrication.

Reliance Electric & Engineering Company, Ivanhoe Road, Cleveland, Ohio. Bulletin 118 describing manufacturing steps in making Type AA induction motors of the squirrel-cage type.

Chicago Belting Company, 113-125 North Green St., Chicago, Ill. A 24-page illustrated booklet on leather belting, giving rating tables, showing how to make leather belts endless, and other helpful data to the mill man.

J. E. Rhoads & Sons, 35 N. Sixth St., Philadelphia, Pa. Two folders descriptive of Tannate-Rockwood short center drives, and facts about Tannate watershed leather belting.

The Cotton-Textile Institute, 320 Broadway, New York City. Literature descriptive of the new motion picture in natural color about cotton.

Brown Instrument Company, Wayne and Roberts Avenues, Philadelphia, Pa. Two booklets, one on mechanical flow meters and one on increasing production without plant expansion through use of the company's meters.

More Details on Plans of the Research Laboratory at New Orleans

PAGE 44 of March COTTON carried a descriptive story of the Southern Regional Research Laboratory, now under construction at New Orleans by the Department of Agriculture, to be devoted largely to research work looking to increased consumption of cotton and its products. The story contained a brief outline, by Robert J. Cheatham, of the proposed work of the cotton processing division of the laboratory, which he heads. We present now a statement from Walter M. Scott, who is chief of the cotton chemical processing division of the laboratory, setting forth broadly some of the objectives of that division. The statement is an abstract of an address by Dr. Scott at the Southern Agricultural Workers Association convention in Birmingham, Ala. He said:

"The cotton chemical finishing division of the Southern Regional Research Laboratory is being organized and equipped to carry on the finishing research for which the cotton manufacturers as a whole are unable to provide. We recognize that a certain amount of research along this line is being done in the laboratories of those chemical firms who manufacture specialties for the textile trade, but the availability of the results is usually restricted.

"In the southern laboratory, a special section of the finishing division will devote its time to the study of additive finishes for cotton. It will make a complete survey of the synthetic plastics and other organic compounds which are now available to the cotton industry, and determine which are most suitable for producing the various effects desired. Attention will also be paid to the development of suitable procedures by which such compounds can be satisfactorily and economically applied to cotton goods on a commercial scale. Furthermore, as a result of our experience with existing compounds, studies will be undertaken for the purpose of developing new compounds which will be still more efficient in producing the desired effects on cotton.

"Another section will devote its time to the study of chemical reactions on the cotton itself, with a view to modifying the surface characteristics of the cotton fiber by actual chemical change. That this is not beyond the realm of possibility has been demonstrated by previous accomplishments along this line. Mercerization is a form of chemical action on cotton, with caustic soda as the agent. A solution of copper and ammonia has been used to impart a particularly lustrous and crisp finish on cotton voiles and lawns. This is known commercially as the Furness process or, more recently, the Ridbo process. Strong sulphuric acid is known to be capable of producing a linenized effect on cotton damasks. It is therefore quite conceivable that other chemical agents may be found which will produce still more desirable effects on cotton.

"Finally, it is our conception that the big national problem of increasing the utilization of cotton in wearing apparel and household fabrics goes beyond the development in the laboratory of new and attractive finishes for cotton fabrics. Another definite part of our program is to carry each successful laboratory development to the point of demonstrating its commercial practicability. And then, to complete the job, these new finishes must enter into actual commercial usage. All of this entails co-operation of the broadest type.

"We need, first, the co-operation of cotton manufacturers and finishing plants, for they are the ones who will use the finishes. We are enthusiastic about the co-operation received so far from those people in the planning of our work. However, in order to capitalize fully upon the results of our work, it is necessary to go even beyond the step of convincing the manufacturers of the commercial practicability of these finishes. In some instances the cotton processors have developed new finishes for their fabrics which they considered superior to anything previously offered on the market. And yet the ultimate consumer has never seen these finishes because the middleman did not consider it good business to pay a slightly higher price.

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LEARN all about the ECONOMY of Benjamin Fluorescent Lighting.

SEE HOW the COLD LIGHT generated by Fluorescent Lamps eliminates annoying heat radiations!

FIND OUT WHERE you can use this new lighting to best advantage.

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Through this Benjamin demonstration you will learn everything that is important to know about Fluorescent Lighting . . . How it provides a new lower cost way of obtaining higher levels of illumination for entire rooms as well as localized work areas . . . How the low brightness and extreme diffusion reduces glare to a new low minimum . . . How the elimination of annoying radiant heat (75% less than that of other forms of lighting) makes Fluorescent Lighting ideal where lighting units are mounted low and for air conditioned locations . . . How for operations involving color the exceptionally fine daylight quality of this light is not only more effective but more economical.

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"So, the further problem is to use every worthwhile means of acquainting ultimate consumers with the new developments. I do not mean by high-pressure advertising, but by giving the true facts to as many consumers as possible and showing them what they may expect from the new finishes. For this purpose, we need co-operation from home economic groups, women's clubs and similar organizations. If a sufficient consumer demand is aroused for cotton goods with a certain new and attractive finish, there will be no difficulty in persuading the wholesaler to purchase and the manufacturer to produce such goods in any desired quantity.

"I wish to emphasize again that the mission of the Cotton Chemical Finishing Division is to develop in the laboratory new and attractive finishes for cotton textiles, to demonstrate to the cotton mills that these finishes can be successfully applied on a commercial scale and to co-operate with all those organizations who are interested in acquainting the ultimate consumer with the value of these finishes. Thus the basic function of the Southern Regional Research Laboratory will be performed—namely, the stimulation of a larger use of cotton, the South's chief agricultural product."

Overlooked

The chief payroll clerk had to quit his job on account of his health, and the general payroll supervisor decided to fill the job by transferring a man from the accounting department.

So the transfer was made and Pete Demlock, the first assistant, was asked to help his new boss "learn the ropes." This was the second time within five years that Pete Demlock had had to break in a man to be his own supervisor. Quite naturally, he felt that, if he knew enough to break in the man who was going to be above him, he certainly should have been considered for the promotion. He said nothing to the general payroll supervisor, but immediately began looking for a job elsewhere. He was exceptionally fortunate in striking one in another company within several days and quit without notice.

"You can't quit like that, Pete," the general payroll supervisor told him in trying to persuade him to reconsider. "You've been around here for almost ten years. I'll give you the next chance that comes along if you'll just stay with us."

"Nope," Pete replied decisively, "I should have done this the last time you transferred a man over my head and had me break him in."

His leaving, under these circumstances, certainly did nothing to improve the morale of the payroll division.

What do you think of promoting from within, rather than bringing a man in from the outside, or from some other department?—*"Management Information, Elliott Service Co., Inc.*

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The Champion Paper and Fibre Company (Canton Division) also manufactures **CAUSTIC SODA** in Solid, Flake and Liquid Forms, Chestnut Tannin Extract, Turpentine, "Trostol" (a combination of resin and fatty acids), "Bindex" (a sulphite cellulose extract) and Hydrogen.

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CANTON (North Carolina) DIVISION

HAMILTON DIVISION
Hamilton, Ohio

HOUSTON DIVISION
Pasadena, Texas

PERSONAL NOTES
About Men You Know

HARRY H. PURVIS, superintendent of the Chicopee Mfg. Corp., at Chicopee, near Gainesville, Ga., will sail for Sao Paulo, Brazil, early in June, on a special assignment in connection with the textile plant operated there by Johnson & Johnson, parent organization of Chicopee. Mr. Purvis expects to be away from this country for several months; upon the completion of this assignment he will resume his position at Gainesville.

J. M. BOITER has been made overseer of weaving at the Fountain Inn and Simpsonville, S. C., plants of the Woodside Cotton Mills Company, succeeding J. H. BURGESS, who, as noted, resigned to accept the position of superintendent of weaving, Gayle Plant, Springs Cotton Mills, Chester, S. C.

ELMER J. HANSEN, vice-president of the Allen-A Company and manager of its underwear mill at Bennington, Vt., has resigned. He had been with the company for more than 25 years. He is succeeded as manager at the underwear plant by J. P. SCHRAMM, who has been assistant manager for some time.

JOE SULLIVAN has been named as assistant superintendent of the Limestone Mills, and Earl Dunnaway has been named for the same position at the Hamrick Mills, both located at Gaffney, S. C., and both mills being part of the Hamrick chain of plants.

J. C. STROUD, formerly superintendent of the Marlboro Cotton Mills, Bennettsville, S. C., has accepted the position of superintendent of the Smithfield (N. C.) Mfg. Co., and is assisted by J. C. STROUD, JR., formerly in charge of spinning and carding at Marlboro.

NORMAN T. THOMAS, who in 1936 became general superintendent of Pequot Mills, Salem, Mass., has been promoted to assistant general manager of the Naumkeag Steam Cotton Company, which is the parent company of Pequot and of the Danvers Bleachery.

PAUL L. EPLEY, formerly associated with the Opelika (Ala.) Mills, has been made overseer of weaving at the Micolas Mill, Opp, Ala.

R. L. SAULS has been made superintendent of the recently organized Hudson Fabric Mill, Easley, S. C.

ROBERT R. WEST has resigned as president and treasurer of the Riverside & Dan River Cotton Mills, Danville, Va. Following his resignation, GEORGE W. ROBERTSON was named as

Mr. Robertson

Mr. West

executive vice-president. Mr. Robertson has been connected with the company for more than 50 years, and for the past 30 years has been general superintendent.

J. C. WALTERS, formerly night overseer of weaving at the Bama Cotton Mills, Enterprise, Ala., has been promoted to general overseer of weaving at this plant, succeeding H. C. DUMAS, resigned. A. B. ODOM, formerly of Selma, Ala., succeeds Mr. Walters.

ALLEN JONES, for the past several years superintendent of Muscogee Mfg. Company, Columbus, Ga., has been made general superintendent, and JOHN P. HARRISON has been promoted from assistant superintendent to superintendent.

HAROLD D. AIKEN, Utica, N. Y., has been elected vice-president of the Cannon Mills, Inc., and is in charge of the yarn sales department. He succeeds S. M. D. CLAPPER, who passed away the middle of January.

LOUIS PACHECO and EARLE SMITH, recent graduates of New Bedford (Mass.) Textile School, are now employed by the Wauregan-Quinebaug Mills, Danielson, Conn., as designers.

H. F. GRAHAM, formerly connected with the Judson Mills, Greenville, S. C., has accepted the position of overseer of weaving at the Brookside Mills, Knoxville, Tenn.

J. H. DAVIS, SR., formerly president of the Spofford Mills, Inc., Wilmington, N. C., has been made chairman of the board, and is succeeded by his son, J. H. DAVIS, JR.

A. L. LAZARUS has become associated with Artistic Finishing Company, Brooklyn, N. C., as supervisor of plant production for the time being, and will also have charge of sales.

V. D. SNYDER, formerly overseer of weaving at Victor Mill of the Victor-Monaghan Company, Greer, S. C., has accepted the same position with the Mathews Cotton Mill, Greenwood, S. C.

R. L. HULSEY, formerly with the Edna Mills, Reidsville, N. C., has been made overseer of carding at the Sibley Division of the Sibley-Enterprise Company, Augusta, Ga.

ARTHUR W. JACKSON has resigned as overseer of knitting at the Utica (N.Y.) Knitting Company to accept a similar position at the Putnam Knitting Company, Cohoes, N. Y.

W. O. RUFFIN, formerly with the Buck Creek Cotton Mills, Siluria, Ala., has been made superintendent of the Opp (Ala.) and Micolas Cotton Mills.

A. B. BOOZER, formerly superintendent of the Klumac Cotton Mills, Salisbury, N. C., has been promoted to vice-president and general manager.

THOMAS O. O'KEEFE, formerly sales manager of Berkshire Knitting Mills, Reading, Pa., has resigned to become vice-president and director of the Magnet Mills, Inc., Clinton, Tenn.

M. C. MILLS, formerly with the Roanoke Mills, Roanoke Rapids, N. C., has become overseer of carding at the Harriett Cotton Mills, Henderson, N. C.

SIDNEY ELSNER of the Chester H. Roth Co., Inc., New York City, has been appointed manager of the full-fashioned division of the company.

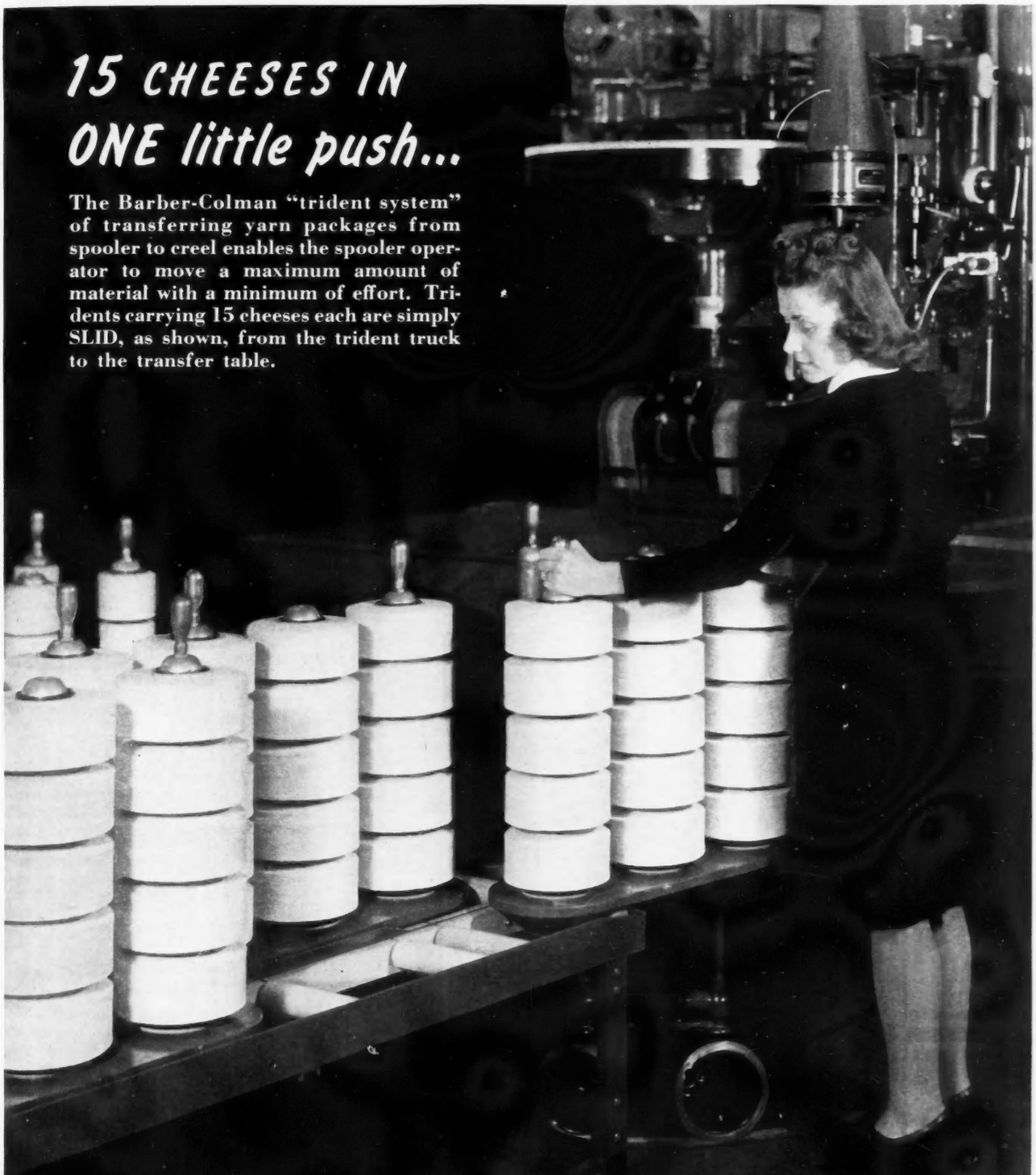
BROOKS DARLINGTON, who has been connected with Du Pont for some time, has been named sales promotion manager of the Du Pont nylon division.

GAINES HUGULEY, formerly overseer of spinning at the Eagle & Phenix Mills, Columbus, Ga., has been transferred to overseer of carding, succeeding S. A. MCCOSH, who is now overseer of carding at the Opp (Ala.) Cotton Mills. Other changes at Eagle & Phenix are as follows: J. D. KIRVEN from overseer of warping and slashing to overseer of warping and spinning; B. D. PRITCKETT, overseer of weaving, to have charge of slashing and weaving.

(*Obituary notes on page* 118)

15 CHEESES IN ONE little push...

The Barber-Colman "trident system" of transferring yarn packages from spooler to creel enables the spooler operator to move a maximum amount of material with a minimum of effort. Tridents carrying 15 cheeses each are simply SLID, as shown, from the trident truck to the transfer table.



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Every year our own research laboratory has opened up new frontiers for our business. We have seen it as a department grow and develop in importance, touching on nearly every phase of our activities . . . until today it represents an insurance policy on the continued development of Sonoco Service.

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If we knew of a *better way* we could serve the textile industry than by making good paper carriers *at low cost*, we would do it.

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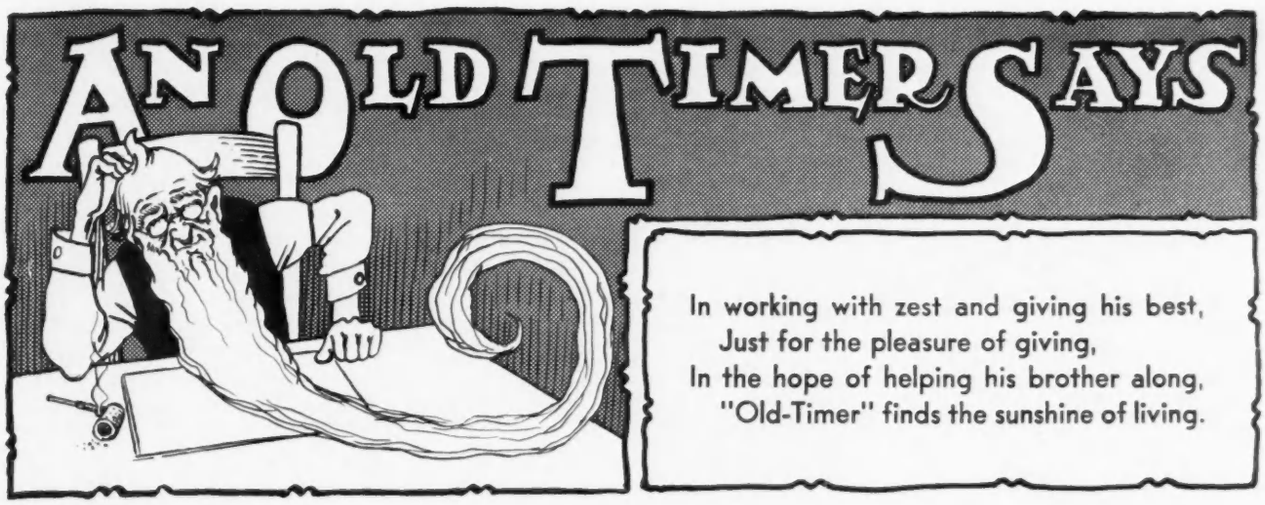
AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

Concluding a Conversation between Old-Timer and Jim

After a Discussion Meeting in Charlotte

(Since this article is written in conversational style, it should be borne in mind that those paragraphs in regular type represent OLD-TIMER'S part of the conversation, and those in *italics* represent JIM'S part.)

(*Concluded from the March Issue*)

Wait a minute, OLD-TIMER, *Just because I have my eyes shut you need not think I am asleep.*

Looks to me like that's a pretty good sign, JIM. If you were not asleep you were so darn near it that you were not hearing what I was saying and I don't propose to sit here all night talking to—

Come on, now, OLD-TIMER, *I'll ask you a question that will get you all wound up to talk again.*

Then for goodness sake spill it if you think you can stay awake long enough for me to answer it.

All right, here goes: Explain how you would go about running a section today if you were given one to run.

That is hitting below the belt, JIM, and you know it. You know I have not run a section in so long that it would take me probably an hour to tie on a warp, and these new looms have so many little gadgets on them that I am afraid I would make such a slow start that the overseer would lose patience and fire me before I had time to get my hand in. But, JIM, there are some fundamental principles that apply to loom fixing today the same as they did 25 years ago and will still apply 25 years hence unless the whole structure of a loom is changed—that is, some entirely new idea is developed for a machine to weave cloth.

I suppose a loom has more eccentric motions on it than almost any other machine. In fact, the lay has a decided slow and fast motion to each revolution of the crank shaft. This can best be realized by placing the hand on the end of the lay while standing in front of the loom and noting that the motion of the lay does not jerk your arm off but gives a fairly smooth motion; then just step to the back of the loom and place your hand on the end of the lay and you will notice a decided jerk, because the lay speeds up from the front center position of the crank shaft until the crank reaches almost back center, then it slows down. The speeding up is the time the pick point of the pick cam hits the pick ball, and while the shuttle is moving from the end of the lay to the end or mouth of the shuttle box—then the lay slows down to allow the shuttle to get to the opposite box, and the slowing down also causes the shuttle to press against the reed all the way across the loom; otherwise, the shuttle would not stay in the loom.

If you will look at the loom you will see this eccentric or speeding up and slowing down motion of the lay is accomplished by having the crank shaft below the level of where the crank arm is fastened to the lay, and as the crank shaft is a comparatively constant speed, this angle of the crank arm gives the change of speed in the lay during one revolution of the crank shaft. You have probably seen a man unloading bricks or throwing bricks up to another man on a wall. He puts two bricks together and by putting all the power behind the brick next to his hand, the two bricks will stick together on their flight up to the man on the wall. Now suppose the shuttle is one brick and the lay is the other brick and the shuttle is in the box. The lay speeds up while the shuttle is moving out of the box. This gives the shuttle momentum toward the back of the loom. As soon as the shuttle gets out of the box, the lay slows down, but the momentum of the shuttle causes it to press against the reed, just like the brick next to the man's hand presses against the other brick.

Now that will do, OLD-TIMER. *You are getting started on a long technical description of a loom that is not getting anywhere near toward answering my question, so get back—*

O. K., JIM, the first thing I would do if I were given a section of looms today would be to find out the jobs on those looms which were causing the most

flags. And the only way I know to do that correctly is to put a pencil and pad in my pocket and make a note of the cause for each flag, that is, what was wrong with that loom or what caused the weaver to raise the flag. At the end of the day I would classify all of those jobs. That is, I would see how many flags I had for battery out of fix, how many flags for filling motion out of fix, how many flags for daggers out of fix, and so on. By keeping this record for several days I would soon find out the jobs which were causing the most flags or the looms out of fix. I am guessing that there would be about four or five jobs which are causing the most flags, and, incidentally, the most work for the fixer.

Now, doesn't it stand to reason that if I can do something to cause those four or five jobs, which are causing most of my work, not to get out of fix so often, I will have less work to do? In other words, I have found out what jobs are taking up most of my time, causing me the most work, and work is what I am trying to eliminate as long as you can do it with brains and not laziness. Therefore, starting tomorrow, every time I go to a loom for anything, I am going to look over that loom for those four or five jobs. If I tie on a warp, just as soon as I get the loom started up I am going to go over those four or five jobs on that loom. Don't you see, JIM, that in a couple of weeks I am going to have less flags up on account of those four or five jobs, because I am catching some of them *before* they cause that loom to get out of fix? Yes, just as sure as death and taxes, old man, I am going to get ahead of those four or five jobs that have been causing most of the flags, and then I will begin to have less flags up and I will not have as much work to do. And there is going to come a day when I will look up and not see a single flag up on my job—whoopee!—and then what will I do?

By golly, I am going to lick those four or five jobs so they will be under my control, therefore when that time comes that I do not have a flag up, instead of leaning up against the work bench I am going to start at one end of the alley and stop each loom, one at a time, and go over those four jobs carefully and go right on down the alley working on those four or five jobs on each loom until I have a flag up somewhere and have to stop to go fix that loom, and just as soon as I get that loom fixed I will come right back where I left off and start in again working on those four or five jobs until I have worked over every loom on my section.

Now, of course, during all of this time I have never left a loom without seeing that the shuttle was boxing correctly—that the check straps are giving the maximum check—that both pickers are tight and parallel—that the screws holding the hold-up straps are tight so they will not wear holes in the hold-up straps and then let them fall, causing a flag—that the harness are set correctly; those are jobs that I *always* look at before leaving a loom. I have actually seen a loom fixer tie a warp on a loom, start it up, and walk off, leaving the shuttle not boxing—a temple loose or too high off of the race plate—or some other little job he could do in five minutes that will just as sure as night follows day cause that loom to get out of fix within a week or two and not only call him back to it but probably stand a half hour and lose production waiting for the loom fixer to get to it.

No, JIM, I don't like work that well, and I will soon have my section so the only flags I will have up will be for warps out and the few jobs that will come up from broken harness straps, broken jack straps, or something like that which I had no way to anticipate—then, by heck, you will see me get out my straight edge and start aligning and leveling my looms until I get over the whole section. That is the pleasure a man gets out of using his head to avoid work.

And when a day comes that I do not feel very good, by heck, I'll just stand around and watch her run, because I know that when I have gotten ahead of the jobs that cause flags, then there is going to be darn few flags.

Maybe so! Maybe so! OLD-TIMER. *That sounds almost like I could run a section of looms, but I guess I will stick to my card grinding and running a section of fly frames and spinning frames where I do not suppose your flag system, or whatever you call it, would work much because we do not have any flags on cards, fly frames or spinning frames.—*

Now, you are trying to be sarcastic, JIM, and after all of the trouble I have gone to in trying to answer your question that is the way you show your appreciation—

Never mind, now, OLD-TIMER. *You know I was only kidding, and I am frank to tell you that I am going to have a copy of your talk typewritten for each loom fixer I have and ask him to give the idea a trial for three months and then we will have a meeting and talk it over.*

Thanks, JIM, but please let me suggest that before you start the system, that you have each fixer keep a record of the number of flags he has up (not for warps out) for a couple of weeks. Do not require the fixer to give you this information because he may not care to run the risk of having more flags up than some other fixer, but let him keep the record for his own information. Then when you have had the system working for three months let the loom fixer see how many flags he has up for the same length of time. If he has made an improvement he will then be glad to admit it, and remember, JIM, the loom fixer will run his section with at least 40 per cent less work than he did before, and that should please him as well as give you more production. The big trouble with this or any other system is getting men to keep it up.

Looks to me, OLD-TIMER, *that any man would keep up a system which would allow him to do less work and still draw the same pay.*

No, JIM, that is good reasoning, but still it is not human nature. It is not even human nature for men to do the things that they know are best for them personally. Remember the argument you and I had one time when I told you that you had to "make a man make money for himself"?

Yes, sure I remember, and we had better not get into that deep water problem just now. Anyway, I suppose, OLD-TIMER, *that if human nature were different you and I would not have any job—in fact, mills would not need overseers and superintendents.*

That's right, JIM. Well, mighty glad you came to see me. Goodbye, and let me hear from you.

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HOW OTHER MEN MANAGE

On Visiting Other Mills and Meetings

EDITOR COTTON:

I have read with interest your editorial on page 43 of the March issue of COTTON in which you encourage mill men to visit other plants in order to broaden their mill experience. You have certainly hit the nail on the head. I want to say here that the open discussion meetings by the operating men and the practice of mill men visiting each other, have done more for the progress of the textile industry than anything that I know.

A number of years ago, and before I became superintendent of a textile plant, we thought we had a mighty progressive organization. Down in another part of the state located in a swamp was a little cotton mill that must have been one of the first in the country. We had heard how backward this little mill was and out of pure curiosity we wanted to go there to see just how a mill could continue to run on such old-timey methods as we understood this mill used. So, one day several of us piled in the car and called on the superintendent of this plant.

Let me say here that this was the most out-of-date, poorly-run mill of any that I have ever seen. It was being run with the original machinery, and from the way it was put together and maintained I just don't see how it kept on. The superintendent of this plant was mighty nice to us. He carried us all through the mill and showed us various things that he was doing. When we came to the spinning room, he casually mentioned that "Here is one thing that has helped us a lot."

On the old spinning frames the roving was allowed to pull directly from the roving bobbin into the trumpet of the spinning frame. There was no way of directing the roving off of the bobbin, and consequently, as the roving was pulled off there was a terrible strain on it, and the roving was stretched. Now this little old backward mill had rigged up some iron rods so that the roving could be run over them and then lead on down into the trumpet. In this way, the roving had a straight pull off of the package at all times. Well, we had been having trouble with our roving being stretched in the creel, so when we got back to our own plant we fixed our spinning frames just like they were in this little old out-of-date plant—and I want to say right here that the addition of those bars to our spinning frames helped the running of our work more than any one thing that has ever been done.

As you know. all of the spinning frames were later equipped with these bars.

I am simply giving this example to show that no matter what mill a man may visit he is likely to pick up some excellent points. There we were, thinking ourselves the most progressive organization in the entire country, and by visiting one little old plant that we went to see out of mere curiosity, we improved the running of our work greatly.

Our plant is located in a section where there are several mills, and a number of years ago the superintendent and overseer of one of these mills, which we shall call the X Mills of Alagalina, visited our plant. We carried them through and were very happy to have them. I honestly believe that this was the first time the executives of this plant had ever called on another mill.

Shortly after that, it occurred to me that we might repay the visit, so we, our overseers and superintendent, went up to visit this X Mill of Alagalina. When we called on the superintendent he advised us that no visitors were allowed and that the only way we could get in would be to get permission from the president of the mill. Well, it so happened that the president was out of town, and we all had to return home without ever getting in that mill. This was most embarrassing to me as it never occurred to me that we would not be allowed to make a return visit. It is true that if the president had been in town we could have gotten in, but this superintendent had been instructed to keep all visitors out of the plant, and he simply had to do as he was instructed.

Shortly thereafter the mill installed a wage-incentive system, and in discussing this with the president of the mill a little later on, he was highly enthusiastic about the system and told of the many savings that had been made. He even went so far as to say that he had saved as much as 72 per cent on his winding alone. He then went into detail and explained that whereas before the wage-incentive plan had been installed, his winder hands were only running about 10 spindles, they now were running very many more than that.

Our answer to that was "You did not need a wage-incentive program—what you needed was a superintendent." We then went on to tell him that the mills in his section had for a number of years been running winders just as he had only begun to do. We told him that the other mills in that section had been exchanging certain information and because he had isolated himself and refused to visit other mills and to allow visitors to his plant, he had completely lost touch with the progress in the industry and did not know what the rest of the industry was doing.

I might add now that not only are visitors welcomed to that mill now, but the operating men of the mill are sent on regular visits to other plants.

The mill men that take part in the regular discussion meetings that are held certainly profit by

them and are much broader as the result. The men can exchange information and determine just what the other fellow is doing. We might get to the point where we consider ourselves so progressive that we do not wish other mills to see what we are doing, but if we just get out and discuss a few things with other mill men, and have a look at their plants, we will see that we are not so smart as we might be.

In closing let me say that I agree fully with you in that a visit should be a 50-50 proposition so that both the visitor and the host can profit by the visit. When other textile men visit our plant we always sit down together and discuss management and operating methods, so that we feel that a visitor to our plant is well worth our time. On the other hand, when we go to visit another mill, we not only learn a whole lot, but we do our best to criticize constructively and make suggestions if our host wishes us to do so. Yes sir, we heartily agree with you that the operating men in the textile industry can be much broader by contacting other mill men, and by attending the open round-table discussion meetings.

CONTRIBUTOR No. 7044

Washboard Shuttles: Some of the Causes

EDITOR COTTON:

This is in answer to the question by "CONTRIBUTOR No. 7033" on page 87 of your March number, who has asked for the causes and remedies of washboard shuttles.

Loom misalignment is the most common cause of the washboard shuttle. However, the timing of the picking motion and harness motion play an important part too. I would suggest a complete check-up of the loom:

See that the parallel plugs are not worn out and that the pickers are perfectly parallel throughout the entire stroke, and that the stroke of the stick is not any longer than necessary. The lay-end back should be in line with the reed and square with the lay-end bottom; also the reed must be square with the race plate.

Having made certain that all the afore-mentioned things were set properly, I would time the harness so that they do not start closing on the shuttle before it clears the shed, so that the shuttle is not lifted from the race plate by the bottom shed coming up too soon.

Check the reed all the way across the loom as the ribs on reeds are mostly of soft wood and very often vary in uniformity as to size from end to end. This cannot be observed with the natural eye when the reed is out of the loom, but when the reed is clamped into place in the lay, any variation in the size of the rib will cause some dents to become distorted and out of line. Just a few dents out of line across the loom will cut ridges on the shuttle back.

CONTRIBUTOR No. 7036

EDITOR COTTON:

To begin with, the number one cause of shuttles being fluted or washboarded is bad loom fixing. Also, sometimes this trouble can be laid to the reed maker as wavy or sharp reeds will cause this trouble.

If I were checking a loom for this trouble I would begin at the bottom and work up as follows:

1. Check the parallels and see that they are all properly adjusted and not too badly worn.
2. Have a good straight picker stick and see that the picker is in good shape, having the proper setting both front and back.
3. Badly worn binders can also cause this trouble.
4. The loom must be properly aligned.
5. A loom picking too early or too late will cause this trouble.
6. The harness opening or closing too soon, or bad harness setting will also cause this trouble.
7. More trouble of this kind is experienced on heavy weaves. In other words, the heavier the construction the more trouble there will be with washboarding.
8. Excessive speed can also be a cause.
9. Badly worn rocker shafts and boxes will cause bad picking, which in turn will cause worn shuttles.

Summing it all up, if a man will fix his looms he can eliminate this trouble.

CONTRIBUTOR No. 7037

EDITOR COTTON:

With reference to washboard shuttles, and the question asked by "CONTRIBUTOR No. 7033" on page 87 of the March issue of COTTON, I would like to give my opinion as to the cause of this trouble.

The fluting or washboarding of the shuttle (small ridges and valleys on the reed-side of the shuttle) is caused by the manner in which the shuttle strikes the reed, the roughness or unevenness of the reed itself, or the manner in which the shed throws the shuttle against the reed when the shuttle first enters the shed.

If we remove a reed from the loom and drag our fingernail along the reed evenly, the reed dents will remain in position, but once we dig our fingernail into the reed at an angle, then the dents part and quite a gaping hole is made. If we then continue to drag our fingernail along the reed we will find that the fingernail will become rough from this treatment.

So it is with the shuttle, if the shuttle is thrown from the box so that it travels parallel to the reed and strikes the reed with most of the back of the shuttle hitting the reed at the same time, then the reed wires will not part. But let the back end of the shuttle become thrown out farther toward the front of the loom, which naturally puts the front end of the shuttle toward the reed at an angle, then the front of the shuttle will cause the reed to part and consequently the shuttle will be cut or washboarded.

Some mills remove the steel end rib from the reeds and this is not good practice, first because the shuttle should have the even surface of the rib to strike against, and second because removing the rib weakens the reed and lets the reed wire become parted just as when the shuttle strikes at an angle.

If the shed is too small, the shuttle forces itself into it anyway, but it must be remembered that the shed is V-shaped, with the apex of the "V" toward the front of the loom. In other words, the "V" is on its side. In this case, the shuttle will tend to be pushed

away from the front of the loom and the smaller part of the "V", and will head into the reed at an angle.

A rough reed will also washboard or flute the shuttle. If reeds become rough through wear, weakened condition, or rust, they should be sent to a reed manufacturer and smoothed. Also, all new reeds should be tested when received from the manufacturer, as through mistake a rough or uneven reed may have gotten into a batch of good ones. If the reeds are checked, you will be doing both the manufacturer of reeds and the mill a service.

CONTRIBUTOR No. 7035

A "Super" Comments on Cotton Staple

Likes Helliwell's article and offers a suggested plan. What do you think? . . .

EDITOR COTTON:

The article on "How Long is One-Inch Cotton", on page 106 of your February issue, by E. H. Helliwell, of Pequot Mills, of Salem, Mass., is a splendid one, and the author should be congratulated on the many points he has brought out. It shows that he has given a great deal of time and thought to the matter of staple length, and that his mill is very particular as to the cotton it allows to enter into process.

My own personal experience agrees entirely with what Mr. Helliwell brought out so effectively. It will pay any mill to watch the staple length most carefully, and to use considerable pains to see that nothing below the mill's standard is allowed to enter the mixing. It is a temptation to a lot of mills to enter cotton that is below their standard for length, because there is an "apparent" saving in first cost. This reasoning is a fallacy for where a fraction of a cent is saved on the first cotton cost, it is lost many times in the manufacturing.

I had the pleasure some years back of visiting Pequot Mills, and at that time they were most particular as to their staple length. The pains taken in selecting their cotton is amply justified by the results they obtain in the way their mill runs. Pequot is one of the outstanding mills in this country, both for production and quality, and it is due in a large measure to the care they give to their raw product.

Mr. Helliwell, in his article, makes the point that they keep the average length of their cotton to .86-inch and better. Along with the average length, a point to keep constantly in mind is the importance of using cotton with as uniform an average length as possible. One-inch cotton will staple all the way from 3/8-inch to 1 1/8-inch. Normally about 15 per cent of it will run 1-inch and better. Two lots of cotton might average out .86-inch each; however, one lot will be more uniform in length than the other lot; and the one with the more uniform staple will be the best cotton for the mill. A lot of the 1/2-inch and other short fibers in a batch of cotton will spin through to the yarn, and it is apparent that these short fibers will stick out of the yarn and not wrap themselves around the bulk of the yarn or around each other, and consequently will add very little strength to the yarn; and where there is a high percentage of these short fibers in a yarn the result is a weak yarn. The short fibers that happen to be bound into the yarn by the long fibers add very little traction or friction to the other fibers and set up "slip" in the body of the yarn.

When weak yarn like that I have just described reaches the loom, it will readily be seen that the action of the loom on the warp will soon break numbers of these strands with resultant seconds and low loom production. If a mill allows even small lots of "short" cotton to become mixed in their regular mix, this short cotton is scattered through a great many warps in the weave room, which brings about a general lowering of production. The short cotton further aggravates the situation for it does not draft out uniformly and makes the yarn more uneven, which lowers the strength still further.

Throughout Georgia, 7/8-inch cotton is used to a large extent, and in such cases it is equally if not more important to keep "short" cotton out of the mill, for 7/8-inch cotton will ordinarily not run as uniform in length as 1-inch cotton.

Another point that should be watched closely in buying cotton for manufacture is to keep out "soft" or weak staple, for this will give the same bad results as "short" cotton. It would be very interesting to see a wide general discussion through the columns of your magazine on the subject of cotton staple.

There is so much room for argument on the length of cotton as now "classified" in general practice. It would be a wonderful help to the mills if cotton could be bought based on a determination of the staple length as shown by a stapling machine, and it would be well for a movement to be started in this direction; and if enough mill men get behind this it can be brought about.

CONTRIBUTOR No. 7062

Trumpet Sizes for Cards and Drawing

"Wash" doesn't like the idea of putting more stock into card and drawing cans. Do you? . . . . . .

EDITOR COTTON:

On page 90 of the January 1940 issue of COTTON I find an article entitled "Placing More Stock in Card and Drawing Cans". This is a very tender subject and requires a great amount of study. The question is, are you going to sacrifice quality in order to have more stock in the cans?

More stock in cans is not a gain, but an evil.

The mill that has put more stock in the card and drawing cans confesses that it did change the trumpets on the cards and drawing, the sizes being used are 135/1000-inch for cards and 125/1000-inch for drawing, making a 51 1/2-grain sliver in both places.

The foregoing is very fine figuring, but why the

different bore trumpets for the same weight of sliver?

The size of bore of a trumpet on cards and drawing frames is governed by the draft between the drawing rolls and calender rolls, and not by the amount of stock in the can. The action is similar to that of the distance between the eye of the presser pad and surface of the bobbin on fly frames. As I have stated in previous articles, if a high grade stock is used, the strand at this point is stronger than the increasing diameter of the bobbin. In other words, the strand is strong enough to hold the relationship between the cones and the flyers. That is why the work runs well.

On the other hand, in case of weak and dirty stock, the eye of the presser often clogs, and besides, the strand being too weak to hold conditions equal, the strand snaps and the result is bad running work.

It should be borne in mind that the bore in the trumpet should be of the proper size without stretching the strand. So the reader can see at this point that the action between the trumpet and calender rolls is the same as between the presser pad and surface of the bobbin, and the work can be spoiled at this point.

It is an impossibility to place more stock in the cans and have the same amount in them at all times. Why? Because (1) you must have the same degree of relative humidity at all times; (2) you must have the same kind of cotton; and (3) you are unable to condense fluffy cotton as you can wiry cotton.

To determine the proper size bore is not an easy matter. I employ the following method. I run only one delivery. (1) I make sure that there is no overdrafting between the first and second drawing rolls. Overdrafting at this point will cause too much tension on the web. (2) Excessive drafting will cause slack if the bore is too small and you are making defective work. However, when common rolls are used, friction contact causes a certain amount of retardation. Therefore, with the foregoing in mind, for a 52-grain sliver I think that a trumpet bore slightly less than ⅛-inch will give good results.

If the stock will run through without breaking, next give attention to the tension of the web. A small bore will cause a slack web, then, as stated, use the smallest bore possible. Next, to have a perfect tension on the web, change the calender roll gear.

If a change of one tooth on the calender roll gear will cause too much tension on the web place back the calender roll gear, and instead make the bore in the trumpet slightly smaller to create a little slack, but remember not to have excessive stretching of the strand. In the case of poor or dirty stock, it is better to run a larger bore in the trumpet, running the calender rolls at a lower speed to cause less tension on the web. When this one delivery is perfect, then all the trumpets should be bored the same.

There should always be three sets of trumpets on hand, having a slightly different bore.

Every practical man knows that as the stock in the can becomes lower and lower, a certain amount of stretch exists. In other words, your strand is heavier at the top than at the bottom of the can, and the more stock you have at the bottom of the can and the more compact it is, the more the stretch, which means light work. It is an evil.

WASH (R. I.)

Foreign Matter in Cloth (*Continued*)

Read your past issues to be fully posted on this subject. Many helpful suggestions . .

AN ARTICLE appeared on page 101 of the September 1939 issue of COTTON in which a mill man had asked the cause of certain black specks in his goods, which remained there even after the goods had been finished. Several answers were given as to the probable cause in this article, and again on page 106 of the December 1939 issue, "CONTRIBUTOR NO. 6987" gave other possible causes for the black specks.

The following are the remarks of the original inquirer, who traces what was done to prevent the specks appearing:

In order that your files might be complete on this particular discussion, we wish to advise as follows: The first thing which we suspected as being the cause of these black spots was belt dressing and the foreign matter accumulated by it. To overcome this possibility we put cloths under all belts in our card room from which belt dressing might possibly get into the work. For our opener room, we purchased fabric belts, which require no belt dressing. Our spinning frames are individually motor driven so there is no possibility from this source. After taking every precaution we could think of along this line, we did not appreciably cut down the number of black specks.

We employed the services of competent chemists, and we found their opinion as to the probable cause to be at variance with each other. We did not get any particular help from this source.

We then suspected tar, which is used as a base on tar gravel roofs, and which we found leaking through some of our warehouses. After stopping this possible source, we still had these black spots in our finished goods.

We finally began to suspect the cotton. We thought that perhaps some foreign matter, such as grease or oil, might be getting into the cotton at the gin. We carefully examined all gins in this locality from whom we purchase cotton and could not discover anything that we thought might be causing it at the gin.

We then began to suspect the cotton itself. It was our idea that these black spots might be caused by immature cotton seed particles or some foreign matter in the cotton itself. We decided to purchase cotton from the Middle West, and upon doing so we found that the number of black spots, although not eliminated, was greatly reduced.

Next we collected some card strips from local cotton and ran them through the picker as best we could. We took these laps to the card and set the card in such a fashion as to take out the least possible amount of foreign matter. Our idea was to make a card sliver with as many of the neps, particles, etc., as possible remaining in the sliver. This sliver was made into filling yarn which was used in the same class of goods as the goods in which the black spots appeared.

This cloth was sent to the same finishing plant that

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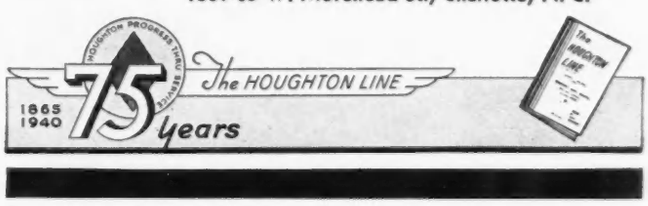

regularly does our work. When the cloth was returned to us, we found it to be literally full of the black spots, which to all appearances are identical with those appearing in our regular goods.

We were then convinced that the black spots were inherent in the cotton and, as indicated previously, we have been using cotton from a different territory. We have also favored the cards handling this particular work in every way possible. By this we mean we put all clothing, flats, etc., in absolutely first class shape.

We wish to thank COTTON for the interest it has taken in this particular problem, and we are glad to supply the foregoing information for the possible benefit of your readers.

The Proper Picker Speeds and Settings

EDITOR COTTON:

"CONTRIBUTOR NO. 6926" on page 105 of the August issue of COTTON asks several questions regarding possible improvement in his opening and picking equipment, or some alterations in them, and advice regarding improvement of his breaking strength along with the cleaning of his stock within these initial processes.

Strange it is to me that so many mill men, even though long in the game, when in a jam to improve the breaking strength of their yarn will invariably expect the pickers to produce this result. Their expectations seem to lie within the four walls of the picking and opener rooms, when the point that must be considered logically has its applied weight on every process from the openers through the spinning, and must be distributed accordingly as these different processes have their certain and positive bearing on the finished product whether it be yarn or cloth.

Applied cleaning in the initial processes of manufacturing yarn or cloth does not always have to be centered on one machine or tandem outfit, but must reach over the entire system. Each unit must have its certain action or duty to perform.

Beating "hell" out of the cotton by high speed, slow feeding, tilted grid bars, or subjecting it to a strong blast of air current from the fans or other drastic means may take some more trash or motes from the raw stock but seldom ever raises the breaking strength. Taking out a lot of white cotton in the mote boxes of the pickers is not a paying proposition to the mill management either.

My opinion is not any better than any of the many other contributors to this department, but what I say or write is in all due sincerity as has been in the ten years I have been a contributor to its columns, but under no circumstances would I remove the Kirschner beaters from my pickers and continue to run straight cotton. Should I be running rayon, flax or something else that is blended with cotton, then this would bring on more talk.

Not being prone to remove or substitute another type beater for the Kirschner type was brought about in my first experience with single-process pickers. The new machines were put in with 3-blade beaters. The laps produced were so tender that some 2 to 5 pounds of waste would find its way back to the picker or opener room ere the laps were laid on the cards—and these laps were handled with all the care possible. The 3-blade beaters were substituted or replaced with Kirschners and the laps were decidedly improved, even though not as tough and well condensed as the old multiple process picker laps, and even now I still see that most everyone would like to have his single-process picker laps a bit tougher for better handling and less waste at the lap laying operation on cards.

Breaking strength usually is improved by the reduction of the severity of beating in the pickers, unless this is found contrawise on vertical openers where with too low speeds here the cotton is often curled. 600 r.p.m. on this ["CONTRIBUTOR NO. 6926'S" speed] machine seems to me as being high; I am partial to about 500 r.p.m. His lattice opener [650 r.p.m.] is speeded about right.

Buckley beaters give a comparative speed of so many beats per inch; however I am inclined to believe that "Beats per pound" will soon offset the term "Beats per inch," as on the synchronized, single-process, automatically controlled, sectional feeding pickers this "Beats per inch" term just doesn't quite suit the situation.

From the figures given by "CONTRIBUTOR NO. 6926" it seems that he is putting this 1350 pounds per hour through 3 pickers which is about 445 pounds per machine per hour at 100 per cent production, or perhaps a little less if he has four pickers, which in either case is too much stock to be forced through any picker for good work and evenly cleaned laps, much less to expect good work to follow through.

Bringing this whole problem to a pinnacle point the center of his trouble is *Too high production through too few machines.*

Further I might say that no doubt it isn't his fault or short thinking as his management has the organization set up for this much production and has no more equipment, so it is his problem to remedy this situation and improve his work.

Using Middling *one*-inch cotton, that is if the cotton is really *Middling* grade, "CONTRIBUTOR NO. 6926" should be able to do good work, get clean stock and produce yarn that will have the standard breaking strength, with but little difficulty.

Breaking strength can be increased at the cards, drawing and roving frames and I shall try to list here some settings that should be helpful in this instance.

On cards use the following:

Cylinder to licker-in .010.

Feed plate to licker-in .012 or .015.

Draft plate or bottom stripper plate .022.

Top stripper plate to .029 all the way, or to remove 5 grains of strips to each flat on 9 pounds or less production per hour to the card.

If he has Saco-Lowell cards draw the cylinder screen nose as high up between the cylinder and licker-in as possible setting the screen to .019 to the cylinder and the licker-in. Set licker-in base to .019, and the licker-in screen to .022. On Whitin and H&B cards similar settings can be used, though sometimes the

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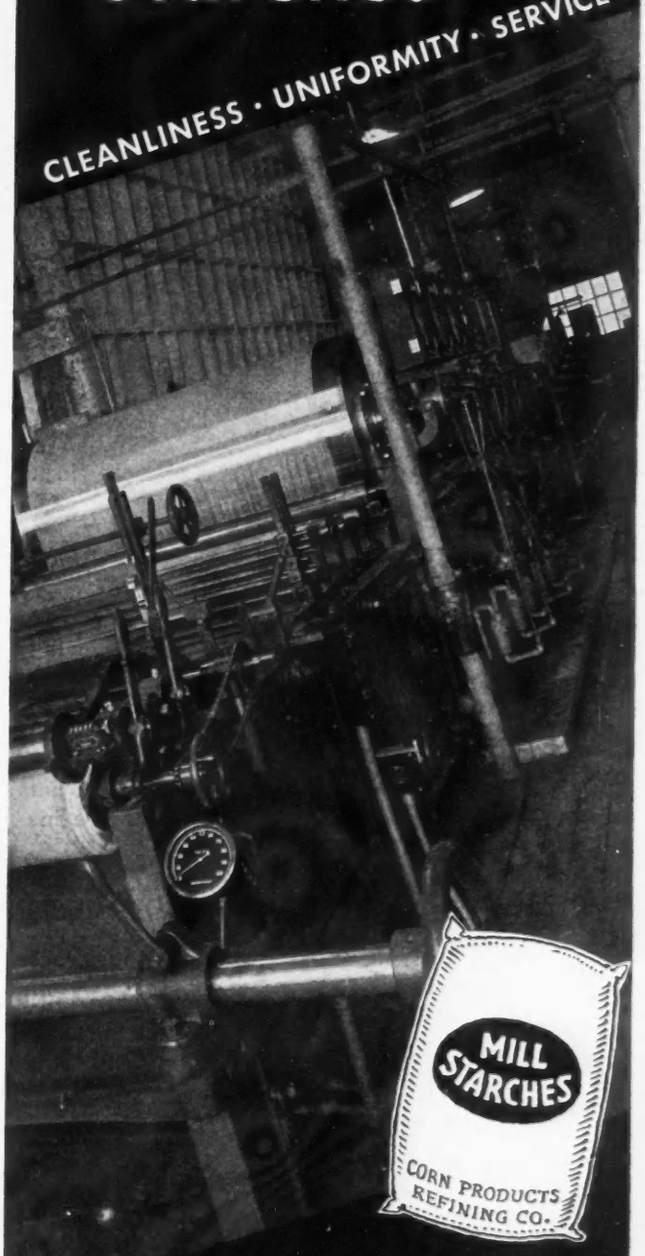

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licker-in screen will have to be set some farther away from the licker-in. Local conditions control these factors, and this is another problem that every mill has to work out itself. However, the above mentioned settings will go quite a way toward preventing white staple from being placed under the card that should go into the sliver can at the front of the card.

Other things coming in here for attention is that all the lickers-in must be in good condition, and the mote knives should be set as close as possible not to strike the licker-in teeth, as a dull licker-in doesn't do the work it should, and is merely a crippled machine on the job.

Keep the cards ground and sharp.

Changing the emery fillet on the traverse grinding rolls after each 40 to 50 hours of grinding service should be closely followed up too. Running longer than this only gives the wire a polishing and not a grinding.

Using 1-inch cotton I offer the following settings for drawing rolls, center to center:

Front to second rolls	1 5/32-inch
2nd to 3rd rolls	1 5/16-inch
3rd to 4th rolls	1 5/8 -inch

On the roving processes I would use the following: (Center to center)

	Slubbers	Inters.	Fine frames
Front to 2nd	1 3/16-in.	1 5/32-in.	1 5/32-in.
2nd to 3rd	1 7/16-in.	1 7/16-in.	1 13/32-in.

If "CONTRIBUTOR NO. 6926" has long-draft roving equipment this front roll setting will in all probability serve well too.

Using these settings, and running his ends slack; even though the frame tenders may kick a little, and running his roll speed at a reasonable rate, and not inserting too much twist I believe will improve his

• READERS of this department are cordially invited to participate in any of the discussions appearing here, and to submit any questions pertaining to any problem of the mill, or finishing plant, or on any other topic of general interest. Names of correspondents are not divulged, and the articles represent the opinions of the authors. This department is open to all . . . . . ◆ ◆

break, and I suggest trying these on a few frames for a test.

Running drawing and roving ends slack will prevent stretch, but by all means do not go to the extreme and create lumps and cause excessive end breakage by running these ends too slack. One evil will not justify another.

Regarding his picker speeds, and if allowed to alter them I would make the following changes in them:

	Present	Alter to
Buckley beater	1300 r.p.m.	1050 r.p.m.
2 blade beater	1100 r.p.m.	1150 r.p.m.
Kirschner beater	1000 r.p.m.	900 r.p.m.

Change all fan speeds not to exceed 1300 r.p.m.

These changes will not be overworking the cotton, and if not being forced with a high figure of production this would do good work.

Setting the card flats will also help clean his work, and a fair standard for these is to .008-inch if not carding over 9 pounds per hour, and the floor is substantial. If over 9 pounds per hour use .009 to 11 pounds, and above that use .010, and with these considerable neps and other trashy matter will in almost every case be largely removed.

I hope that "CONTRIBUTOR NO. 6926" will be able to use these settings to good advantage as well as the other suggestions, and any other reader of COTTON that is faced with a similar problem.

CONTRIBUTOR NO. 6984

◆◆◆

Preparing Warp and Filling for Duck Looms

(*Continued from page* 90)

The cutting out or pulling in of ends at the eyeboard and the changing of presser rollers often consume considerable time, but if the mill makes a great variety of fabrics it is not often that this can be avoided, but the foreman of beaming should try to plan his schedule to get his sets through with the least possible amount of changing on the beamers. The running of a set on more than one length beam means, lost production while the beamer is stopped to change presser rollers. While the cost of presser rollers run into money, we think the investment in several extra presser rollers is money well spent, as the time consumed in reout rings or changing heads, is ofmoving the pin, adding or taking ten considerable, and means real lost production when this delay occurs during the running of a set.

In this connection there are certain other hindrances that hold up production, things that might be improved. One of these is the failure to have a convenient place to keep the rollers, pins, heads and extra rings. Suitable racks should be provided, as near the beamers as possible, then the overseer and the secondhand should see to it that everything is kept in its place. Another thing is the slight irregularity that is often found in the length of the loom beams. While we realize the difficulties involved in making the beams the exact length, yet if a certain length is to be made, the length should not vary over one-half inch each way. The spring head in the presser roller will take care of this much variation, but any variation in excess of this will require a change in the length of the roller, which always means some lost time.

There are a few other things, while almost directly bearing on the subject of getting production through the beaming department, we think their nature requires discussion in separate articles. Among these things are systems of marking warps and filling and piece-work systems. Included in these will also be some discussion of checking tickets and creels to prevent errors, inspection of yarn, prevention of bad work, oiling, cleanliness and general 'housekeeping' in the warping, beaming and filling winding department.

(*To be continued*)

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Checking Cloth Baled against Picks Earned

AN inquiry to COTTON asked if there is an accurate system for checking yards of cloth in the cloth room against picks paid for in the weave room, or in other words, is the mill paying for more cloth than it is actually getting on the looms?

The following is the method used at one mill for checking on the amount of cloth that passes through the cloth room: Before getting pick counters our practice was to check the cuts baled against cuts paid for in weave room. For awhile after getting pick counters we converted baled cloth to picks and compared with picks paid for in the weave room. This was a long tedious job and the results so close that we thought it a waste of time.

Our practice now is to figure the percentage efficiency in the weave room on pick counters and compare this with percentage efficiency figured by our cost department on cloth baled basis. There is no extra work here as we figure detailed efficiencies on pick clocks for use in the weave room and our cost system makes a breakdown for each fabric necessary, which makes a total percentage efficiency easy to get. These two figures are never the same as pick clocks count every pick and a yardage basis makes no allowance for let-back on change, etc. However, the same difference is maintained each month and if this should look questionable we can always go back and re-check by the old method.

From our experience with pick counters we believe there is practically no chance for stealing. One known method is to run a loom while it has no warp in it, but a mill whose supervisors will permit this practice probably has a pretty high cost through inefficient supervision anyhow. The other method is to hit the pick clock just as it registers. This is almost impossible on the new clocks and this practice can be stopped by watching for pick clocks that show signs of having been beaten.

Another comment on this inquiry is given: In some mills the goods are weighed in the weave shed before they leave so that there is an accurate record kept of the amount of cloth that goes to the cloth room. The goods are weighed by a man from the cloth room. The weight is checked against the picks which should give the number of yards.

After the cloth is run through the equipment in the cloth room and is cut, if it has to be cut for defects, the goods are weighed again as they are baled. After the cloth has gone through the cloth room equipment it is stretched somewhat so that the weights must be checked again to see that they are up to specifications. The mills are allowed a leeway in weight, about one per cent on the light side and two per cent on the heavy side.

Some mills do not check the weight in the weave shed but wait until it is ready to bale for shipment. Others weigh it in the weave shed before it leaves, and still others bring it from the weave shed to the cloth room where it is weighed. Most weavers are paid by the pick although a few mills pay by the yard.

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328. SKF Ball and Roller Bearing Transmission Appliances—84 pages, 100 illustrations, descriptions and dimensions of universal, unit, split and roller bearing pillow blocks, ball bearing drop and post hangers, take-up boxes. Suggestions and dimensional and load data for bearings also given. SKF Industries, Inc., Philadelphia, Pa.

330. Tools for the Textile Trade—a twelve-page booklet illustrating and describing specially selected tools for all textile mill departments—Loom Fixers, Spinning Room Fixers, etc. Snap-on Tools Corporation, Kenosha, Wisc.

331. Unbrako Self-Locking Hollow Set Screw—Bulletin Form 532 includes illustration and descriptive matter of this latest improvement in socket and screws. This bulletin also features the complete line of "Unbrako" Socket Screws. Standard Pressed Steel Co., Jenkintown, Pa.

332. Hard Maple Flooring—an 8½ x 11-inch folder featuring a close-up of Northern Hard Maple Flooring and specimen pieces to show grades, prepared for the convenience of architects, builders and others when considering flooring grade requirements. Maple Flooring Mfrs. Assn., 332 South Michigan Ave., Chicago, Ill.

333. Fafnir Ball Bearings for the Textile Industry—Outlining the applications and advantages of ball bearings on textile machinery. Fafnir Bearing Co., New Britain, Conn.

334. Precision Winding for Silk and Rayon Yarns—Describes the new No. 80 Leesona Winder and all attachments that are used for silk hosiery threads and rayon yarns. Universal Winding Co., P. O. Box 1605, Providence, R. I.

335. Casters and Wheels—192 pages, describing casters and wheels suitable for all types of industrial application. Every mechanical engineer and purchasing agent should have this. Darnell Corp., Ltd., P. O. Box 4027-N, Station B, Long Beach, Calif.

337. Sizing and Finishing—A pamphlet which will give the mill man an understanding of starch properties which will lead to greater efficiency in sizing and finishing. Stein, Hall & Co., Inc., New York City.

338. Thickening Materials for Textile Printing—Describing materials and methods employed in preparation of color thickening so that it may be properly and economically transferred to cloth through the medium of the printing machine. Stein, Hall & Co., Inc., New York City.

340. Notes on Cotton Warp Sizing—a 48-page handbook giving valuable data on the purposes and properties of various sizing products, their uses and preparation, with much information on the operation of slashing equipment. Will help solve many sizing problems. Address The Hart Products Corp., 1440 Broadway, New York City.

343. SKF Better Spinning and Twisting—16-page illustrated catalog containing technical information relating to construction and performance of SKF roller bearing spindles, tension pulleys, guide and idler pulleys and miscellaneous pulley and bearing applications. Distributed by all leading textile machinery manufacturers and SKF Industries, Inc., Front St. and Erie Ave., Philadelphia, Pa.

346. Dependable Finishing for Modern Elastic Top Hosiery—describing and illustrating equipment for basting and attaching insert elastic, attaching wide or welt elastic and seaming elastic in women's hosiery. Union Special Machine Company, 400 North Franklin St., Chicago, Ill.

347. Rhoplex Resins—Attractive folder discussing the outstanding properties of these Aqueous Dispersions with suggestions for their application to textiles. Rohm & Haas Co., Inc., Philadelphia, Pa.

348. Johnson Ledaloyl Bearing Bronze—Illustrated booklet telling the complete story of Johnson Ledaloyl Bronze, the newest development in self-lubricating bronze for textile bearings and bushings. Johnson Bronze Company, New Castle, Pa.

349. Preview—12 page illustrated booklet describing the Best Universal Locking System which features the interchangeable core and offers a solution to locking problems. Best Universal Lock Co., Indianapolis, Ind.

350. Theoretical and Applied Silk-Soaking—Attractive 28-page booklet outlining methods of silk-soaking and outlining investigations on the soaking, backwinding and degumming of silk. Hart Products Corp., New York City.

CONTINUED ON PAGE 140

CONTINUED FROM PAGE 139

351. Wetsit—Leaflet describing Wetsit, a synthetic aromatic compound with excellent surface tension reducing properties; gives rapid wetting out and thorough penetration; available in three strengths. Jacques Wolf & Co., Passaic, N. J.

352. Lupomin—Leaflet describing Lupomin, a new cation active softening agent for all textiles but especially acetates and rayon crepes; odorless, permanent and easily applied; imparts soft, full feel. Jacques Wolf & Co., Passaic, N. J.

353. Luposec—Leaflet describing Luposec, a waterproofing agent with great stability; soluble in cold or warm water at all temperatures; suitable for all fibres and especially effective in splash-proofing silk hosiery. Jacques Wolf & Co., Passaic, N. J.

354. Vacuum Cup Pulleys—Leaflet describing the new Vacuum Cup Pulley which gives greater production, less power cost, less maintenance cost, and much longer life to belts and bearings. Vacuum Cup Metal Pulley Company, Inc., Detroit, Mich.

355. Air Conditioning in Cotton Spinning—A technical discussion of the need of adequate humidification and controlled air change in the spinning room of the textile mill of today. Ask for Bulletin 539. Parks-Cramer Co., Fitchburg, Mass., and Charlotte, North Carolina.

356. Parks Textile Specialties—A 14 page bulletin with brief descriptions of the Parks line—Automatic Airchanger—Central Station and Unit Air Conditioners—High Duty, Turbo and Turbomatic Humidifiers—Automatic Regulation—Traveling Cleaners—Portable Dustless Card Stripper—Humidifier Valves and Accessories. Parks-Cramer Co., Fitchburg, Mass., and Charlotte, N. C.

357. Care-Gant—The Original 100% Active Warp Dressing. Attractive folder describing Caro-Gant the Warp Dressing that makes stronger more elastic warps with a maximum breaking strength and a minimum reduction in elasticity. Hart Products Corp., New York City.

358. Rhonite Emulsions—Attractive bulletin describing the Rohm & Haas complete line of Urea Formaldehyde Resins for Textile Finishing. Rohm & Haas Co., Philadelphia, Pa.

361. Thaumaphos — The textile detergent — Seven page booklet describing Thaumaphos, the wonderful phosphate. Included is a list of the Thauma brands and a survey of their uses in the wet finishing of textiles. Detergent Products Corp., Atlanta, Ga.

362. Leather Belting Calculator—Handy and attractive calculator for determining belt speeds, horsepower per inch of belt widths, etc., will be sent free on request. J. E. Rhoads & Sons, Philadelphia, Pa.

363. Form 769, Condensed Catalogue—a 40 page pocket size booklet illustrating and describing sewing machines adaptable for practically all phases of the needles trade. Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York City.

364. The Superlock—Form 828—an attractive two-color illustrated 6-page folder describing the "Fastest Overseaming Machine in the World". Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York City.

365. Catalog No. C-306—a 32 page Standard Conveyor booklet showing numerous actual installation photographs on roller, belt, slat, chain, wheel, live roller, push bar and vertical lift conveyors—also spiral chutes, tiering machines, portable pilers, lower-lifts, record lifts and pneumatic tube systems. Standard Conveyor Co., North St., St. Paul, Minn.

366. Houghto-Size SR—Leaflet describing a new sizing compound for spun rayon warps which provides high breaking strength, greater elasticity and increased weave-room production at low cost. E. F. Houghton & Co., Philadelphia, Pa.

367. Rayon Oils—Leaflet describing three Houghton products used for throwing rayon filling yarns for weaving, as softeners in gelatin and similar solutions used for sizing and as softening oils for yarns, knitted and woven fabrics. E. F. Houghton & Co., Philadelphia, Pa.

368. Surfax W.O.—Leaflet describing a new surface-active chemical which possesses unusual wetting out and softening properties. E. F. Houghton and Company, Philadelphia, Pa.

369. Luskenheimer Catalog 78—136 page catalog describing a complete line of Bronze, Iron and Steel Valves, Boiler Mountings, Lubricating Devices, Air Devices and other specialties. Also included is a section on the thermo-dynamic properties of steam, and a table of shipping weights. The Lunkenheimer Co., Cincinnati, Ohio.

370. Notes on Exsize—Attractive new booklet describing the use of Exsize for desizing fabrics. Included is a review of general sizing and finishing and a flow chart showing the cotton and rayon finishing processes. Pabst Sales Company, 221 North LaSalle St., Chicago, Ill.

371. Aluminum in the Chemical Industry — Published by Aluminum Company of America. Fifty-two pages. Text and illustrations covering adaptability of aluminum and aluminum alloys to chemical industry applications and characteristics governing recommended uses. Aluminum Company of America. Pittsburgh, Pa.

372. Stewart Fences—Illustrated catalog which is a complete text on the subject of fence for industrial uses. Stewart Iron Works Company, Inc., Covington, Kentucky.

373. The Bowen Spinner's Record Book—Handy leather bound notebook which contains a world of useful information as well as tables for keeping accurate spinning data. U. S. Ring Traveler Company, Providence, R. I.

374. Fidelity Spooling Machines—Illustrated booklet describing the Fidelity Spooling Machine and outlining its many applications in the textile industry. Fidelity Machine Company, Philadelphia, Pa.

375. The Fidelity 3 Carrier Back Winder—Folders describing this new backwinder which is used to recover silk in press-offs from full fashioned three carrier leggers. Fidelity Machine Co., Philadelphia, Pennsylvania.

376. Leather Booklet No. 202—Attractive booklet illustrating and describing BONDARON Special Tanned Leather as used in various forms such as Check Straps, Pickers, Harness Straps, Lug Straps, Bumper Straps, etc. Also describes BONDARON Special Tanned Solid Round Leather Belting, Flat Belting and Standard Oak Tanned variety of Leather Belting. Chas. Bond Co., Philadelphia, Pa.

29. Continuous Card Stripper—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shop, 147 Milk St., Boston, Mass.

30. Lubrication of Textile Machinery—32 pages illustrated. Data covering the economical lubrication of all textile machines. New York & New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

62. Rubber Products for the Textile Industry—A 40 page booklet giving a wealth of information on the proper selection, installation and operation of rubber belts, together with charts, showing horsepower rating, pulley sizes, V-belt sizes, also information on all types of hose and rubber covered rolls used in the textile industry. Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J.

64. SKF in the Cotton Mills—24 page bulletin describing bearing installations for practically every machine in the textile industry including roller bearing spindle and tension pulley. SKF Industries, Inc., Philadelphia, Pa.

77. Bulletin S 200—Illustrating and describing the new Reeves Variable Speed Drive for spinning and twister frames, explaining its many distinct advantages and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

88. Dayton Cog Belt Catalog—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

110. 3-in-One Oil for Industrial Uses—showing the many industrial uses and advantages of this oil. A. S. Boyle Co., Jersey City, N. J.

116. Arey—Telling in an interesting way the story of Arey, which completely liquefies ordinary thick boiling pearl starch and its many advantages. Drake Corporation, Norfolk, Va.

117. Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Bearings Div., General Motors Corp., Harrison, N. J.

120. Goodyear Mechanical Rubber Goods Catalog—40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co., Akron, Ohio.

139. Textile Detergents—Theory of the use of alkalis and control of pH—This 32 page booklet explains in simplified manner for the benefit of the layman the chemical processes that take place in using textile detergent in the finishing of textile goods. It contains many useful tables and data. Detergent Products Corp., Peachtree Bldg., Atlanta, Ga.

141. V-Belt Engineering Data Book—Over 50 pages of pertinent engineering information including data on selecting a V-belt drive design of special V-belt drives, numerous standard tables, charts and belt and sheaves list prices. Manhattan Rubber Manufacturing Div. of Raybestos-Manhattan, Inc., Passaic, N. J.

154. Johnson Bronze Bulletin No. 340—showing over 800 sizes Johnson general purpose bronze bushings. Johnson Bronze Co., New Castle, Pa.

155. Link-Belt Catalog 1574 on the P. I. V. Gear—giving details of this positive variable speed control. Link-Belt Co., 307 N. Michigan Ave., Chicago.

156. Link-Belt Engineering Data Book No. 125—showing features and giving engineering data on Link-Belt silent chain drive. Link-Belt Co., 307 N. Michigan Ave., Chicago, Ill.

157. Grading Rules and Complete Specifications for Laying and Finishing Maple Floors—Maple Flooring Manufacturers' Association, 1794 McCormick Bldg., Chicago, Ill.

163. Roto-Koner—Bulletin describing the new No. 44 Universal Winder, known as the Roto-Koner for winding knitting yarns, which has many new and distinctive features. Universal Winding Company, P. O. Box 1605, Provdence, R. I.

164. Johnson Rotary Pressure Joints—Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instructions, types, sizes, dimensions and prices. The Johnson Corp., Three Rivers, Mich.

168. The Tube-Tex for Tubular Knit Goods—Bulletin describing this modern machine which extracts, processes, dries, conditions and folds in one continuous operation, lowering costs, saving labor, power, space and waste. H. W. Butterworth & Sons Co., York and Cedar Sts., Philadelphia, Pa.

170. Gates Textile Accessories—showing the increased efficiency and economy to be secured through the use of Gates cone belts, evener belts, card bands and loom binder cushions. The Gates Rubber Company, Denver, Colo.

171. Design of V-Belt Drives—48 page booklet full of valuable tables and data showing the type, number and design of V-belts that will give the greatest efficiency on each particular drive. The Gates Rubber Company, Denver, Colorado.

176. Sonoco Products—A 60 page illustrated booklet giving descriptions, specifications and charts of the many Sonoco products, including bobbins, cones, tubes, cork cots, roving cans, spools, rolls, etc. Sonoco Products Co., Hartsville, S. C.

184. Speed Control Handbook T-35—new reference book in variable speed control, said to be the most complete and helpful book on this subject ever published. 112 pages and more than 200 illustrations of interest to every production executive, purchasing agent, superintendent, overseer and master mechanic. Reeves Pulley Co., Columbus, Ind.

185. Dulux—The White Finish That Stays White—New book describing the new ten-point finish for factory walls and ceilings, the finish that stays whiter, stays cleaner and stands repeated washing. E. I. du Pont de Nemours & Co., Finishes Division. Wilmington, Del.

187. The Wildman Single-Head Full-Fashioned Hosiery Machine—Literature on request from the Wildman Mfg. Co., Full-Fashioned Division, Norristown, Pa.

COTTON, Grant Bldg., Atlanta, Ga.

Please send me, without obligation, free booklets described in the April 1940 issue of COTTON.

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Firm Name ..... Position .....

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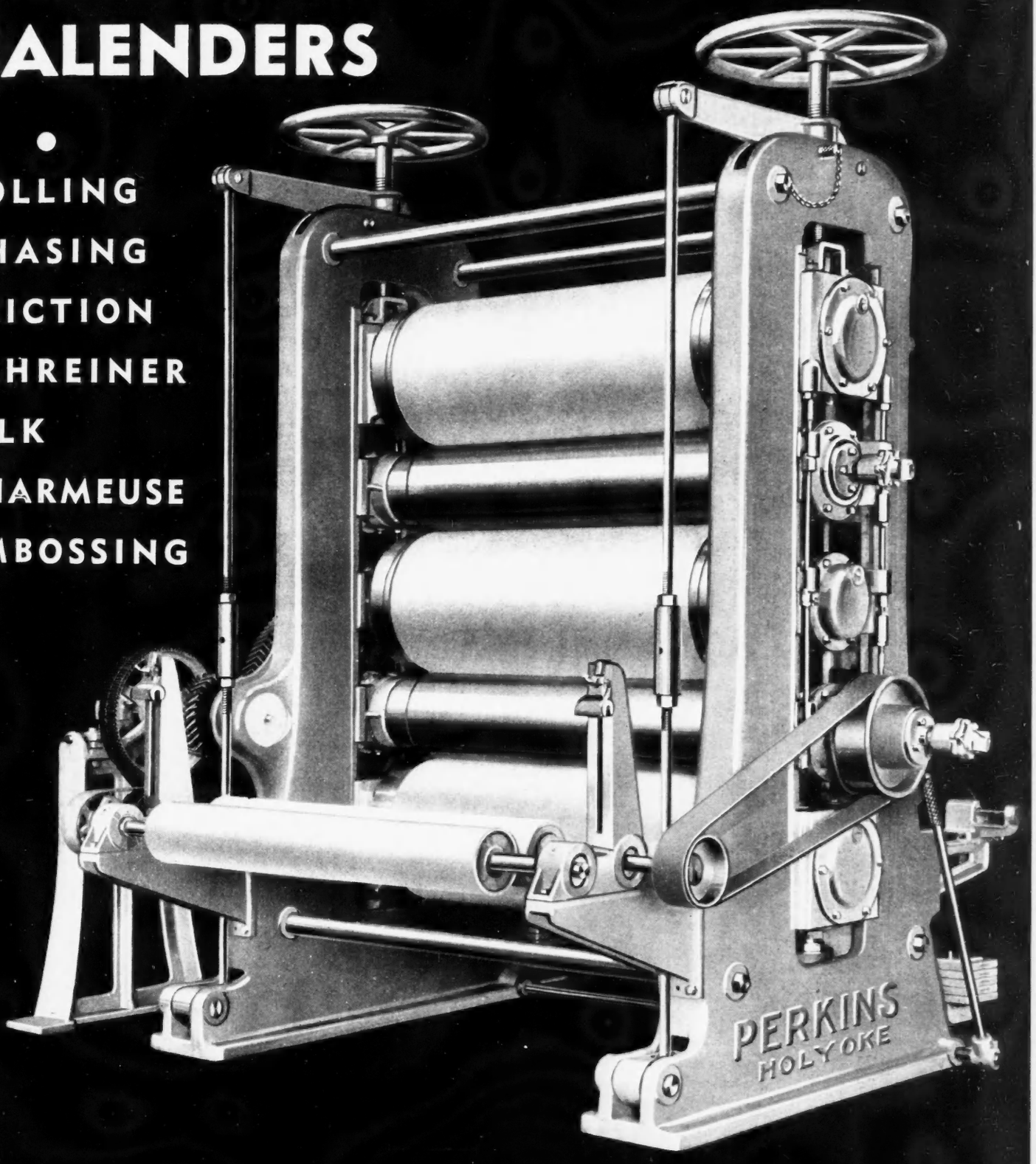

B. F. PERKINS & SON, Inc.

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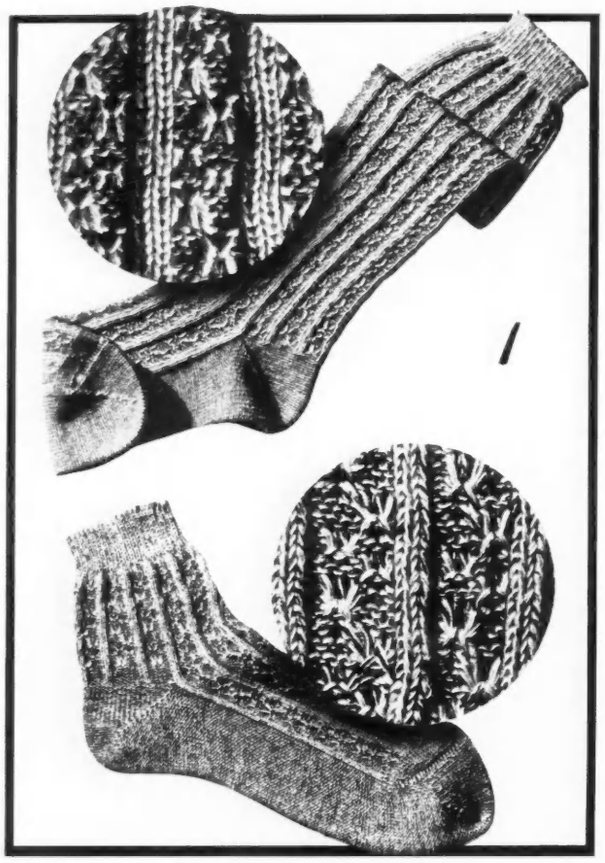


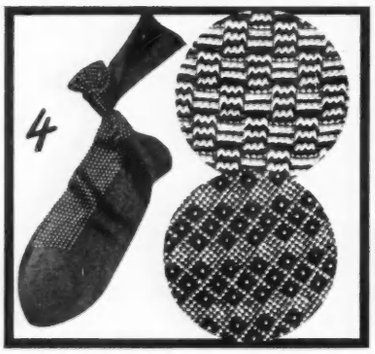
WITH AN EYE TO AUTUMN

"Fashion" today is "volume" tomorrow. That's how style trends go. Fashion merchandise now, many of the items shown here, according to buyers and salespeople, may well be up in the fast-moving, volume class by the time the leaves are turning. Let's see which way the signs in the smart Fifth Avenue shops are pointing now.

Most of the Fifth Avenue shops are making a point of fancy anklets and knee-high socks for women. It is the general feeling that the knee-high wool sock will begin next fall where it leaves off this spring, which would indicate a market for fancy effects in this type hose. Good examples of this fancy trend—and entirely new—are the tweedy, Links-and-Links "inside out" knee-length sock for women shown in Illustration 1, and the anklet of the same type accompanying it. Even more important "fancies" are the two- and three-toned Links-and-Links in new and novel patterns. Shown in Illustration 2 is a brand new women's anklet of this type. It is felt up and down the Avenue that this two- and three-toned Links-and-Links merchandise is merchandise to keep your eye on—and be prepared to produce in volume.

Surprising to many is the success enjoyed by the straight sock and "swivel" socks without heel or ankle bend as shown in Illustration 3. More and more stores in New York are displaying them prominently, featuring them in advertisements and finding them salable. The stores expect these will be even more popular in the fall along with terry cloth, of which big things are expected this summer.

In the exclusive men's shops spring socks are very much in evidence in the new textile and necktie patterns—beautiful reproductions of tweed and shetland fabrics, small necktie plaids and little geometrics. Shown in Illustration 4 are a near-polka dot sock tied in a knot to show the necktie resemblance, another necktie-sock pattern, and a new tweed sock pattern. The first two are produced on the Scott & Williams 80 W Shog Machine; the tweed on the Komet Links-and-Links Machine. All deserve the most careful consideration of the manufacturer in planning his fall lines.

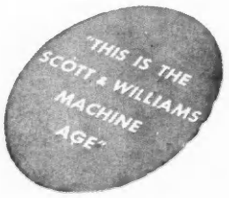


In addition, many unique wrap patterns that sell in volume the year round can be produced on the Scott & Williams HH-PW Machine. Scott & Williams also has many new and novel suggestions in Links-and-Links patterns for men's, women's and children's socks of all types. We will be glad to give more detailed information about these patterns, and the machines that produce the patterns shown on this page.

CELEBRATING 75 YEARS OF CONTRIBUTION TO PROGRESS IN THE KNITTING INDUSTRY

SCOTT & WILLIAMS, INC., 40 Worth Street, New York, N. Y.

Established 1865



KNITTING SECTION

Many New Exhibits to be Seen at

36th Annual Knitting Show

ONCE AGAIN the time has rolled around for the annual Knitting Arts Exhibition at Philadelphia, and knitters from far and wide have marked their calendars to be on hand for the 36th show at Commercial Museum from April 15 through 18. Here will be shown new and improved equipment, and supplies of interest to the executive and operating official connected with the knitting industry.

Advance reports indicate that there will be more new exhibitors at the 1940 show than has been true of any Exhibition in recent years, which speaks well for the value received by both visitors and exhibitors that attend. At this writing, thirty-two new exhibitors have taken space to present their products.

Besides the value of attending the show from the standpoint of keeping up with modern improvements, it offers to the busy executive the opportunity to meet with and discuss his and mutual problems that come under the heading of executive management.

The value and importance of this Exhibition, which is the only one covering the knit goods trade exclusively, is one of the outstanding industrial exhibitions held in this country. It serves, at an economical cost to all concerned, the most effective means of annually bringing together those who supply the industry with its needs, and the principal executives of mills who have the buying decisions. The show also serves as a meeting place for old friends, and for those closely identified with the industry in the United States and Canada. Usually there are many representatives of the industry from foreign countries, but it is expected that many of these will be unable to attend this year because of unsettled conditions abroad.

The record of the Knitting Arts Exhibition to date is an exceptional one, for it has been held annually for thirty-six consecutive years, during which time it has shown steady growth and improvement until it is rated today as one of the finest of the industrial exhibitions of the country.

Its most pronounced growth has been within the last few years, which may be explained by the expansion that has taken place in the principal knit goods industries, particularly the hosiery industry. In the last three years alone, 160 new hosiery managements have been established, all of which have had to deal with the installation of needed equipment and the purchase of necessary supplies. As was true in the last two years, all the floor space will be occupied.

The Knitting Arts Exhibition is held under the joint auspices of the National Association of Hosiery Manufacturers and the Underwear Institute. Both of these organizations will hold their annual meetings in Philadelphia during the week of the Exhibition.

Mr. Constantine

Mr. Cheney

Mr. Ball

Mr. Eau

COME TO SEE US

● At the Knitting Arts Exhibition in Philadelphia. "Cotton" will occupy Space No. 83. Representatives of the editorial and advertising departments will be on hand throughout the entire show, and a cordial invitation is extended to all those attending the show to visit with us. Those in attendance will be Robert W. Philip, editor; John C. Fonville, assistant editor; Richard P. Smith, advertising manager; and Arthur C. Shaw and E. A. Robison of the business department . . . . .

Officers of the National Association are Austin H. Carr, Durham (N. C.) Hosiery Mills, Inc., chairman of the board; R. O. Huffman, Morganton (N. C.) Full-Fashioned Hosiery Co., vice-chairman; John Bromley, Quaker Hosiery Co., Philadelphia, vice-chairman; Earl Constantine, president; Marshall V. Moss, NoMend Hosiery, Inc., Philadelphia, treasurer; and Reuben C. Ball, secretary.

Officers of the Underwear Institute are Ralph M. Jones, Utica (N. Y.) Knitting Co., chairman executive committee; Grover C. Good, Globe Knitting Works, Grand Rapids, Mich., 1st vice-president; Oscar W. Gridley, Utica (N. Y.) Knitting Co., treasurer; Roy A. Cheney, president; Earle E. West, assistant secretary; and Francis E. Simmons, research director.

The exhibition, as for many years past, is under the direction of Albert C. Rau.

Exhibitors at 36th Annual Knitting Show

Exhibitor	Space Number
A	
Aberfoyle Mfg. Co.	307-8-321-2-332-3
Adelphia Textile Company	376
Allentown Bobbin Wks, Inc.	217
Aluminum Company of America	446-447
Amalgamated Chemical Corp.	23-24
American Bemberg Corp.	279-280-289-290
American Enka Corp.	379-380-401-402
American Magnesium Corp.	446-447
American Viscose Co.	309-310-319-320
American Vitos Co., Inc.	355
American Wool & Cotton Reporter	9
Amer. Yarn & Processing Co.	388-389-394-395
Edw. R. Ammon, Inc.	37
Joseph Amon	282
Amsco Packaging Mchy., Inc.	43
Arrow Needle Company	11
Atlantic Rayon Corp.	195-196
The Atwood Machine Co.	270-271-272-297-298-299
B	
Benjamin Elec. Mfg. Co.	421-423
Boger & Crawford	273-274-295-296
Boshamer & Co.	40
The Bristol Company	363
Bruegger Winding Co.	164-165
Edw. G. Budd Mfg. Co.	154-155
H. W. Butterworth Sons & Co.	64-65-66
C	
Cannon Mills, Inc.	390-391
Caron & Patterson	351
Celanese Corp. of Am.	206-207-212-213
China Grove Cotton Mills Co.	222
Clover Leaf Mfg. Co.	25
Coleman & Co.	383
Continental-Diamond Fibre Co.	174
Chas. Cooper Co., Inc.	364-365
Crawford Mfg. Company	338
Cross Cotton Mills Co.	199-200
Currier & Co.	392
Cocker Machine & Foundry Co.	67 to 72 incl.
Cotton	83
D	
Darlington Fabrics Corp.	92-93-94-95
Davison Pub. Co.	169-170
Diehl Mfg. Company	226-227-228-229-229AA 262-262AA-263-264-265
Dixie Mercerizing Co.	245-246-247-248
Dubied Mchy Co.	408-409
The Duffy Silk Co.	396-397
Duplan Silk Corp.	51-52
E. I. duPont de Nemours	230-231-260-261
E	
John A. Eberly	204-205
Ewing-Thomas Corp.	38-39
F	
Fairchild Publications	80-81-82
W. F. Fancourt & Co.	249
Morton Feldman, Inc.	250
Filatex Corp.	7
J. A. Firsching & Son	359
Fletcher Works, Inc.	172-173
J. B. Ford Sales Co.	352
Foster Machine Co.	346-347-362
Franklin Needle Co.	204-205
Franklin Process Co.	424-425
Friedberger-Aaron Mfg. Co.	21A
G	
General Electric Co.	183-184
General Hosiery Motor-Mend Corp.	244
Globe Dye Works Co.	63
Grand Rapids Textile Mchy Co.	159-160-185-186
Grove Silk Co.	12-13
Gulf Oil Corp.	8
Gunze Silk Corp.	60
H	
Hampton Company	238-239-240-241
Oscar Heineman Corp.	344-345
Hellwig Silk Dyeing Co.	281
Hemphill Company	124 to 129, inc.
John W. Hepworth & Co.	225
Hoffner Rayon Corp.	223-224
Alfred Hofmann, Inc.	342-343-366-367
Hooker & Sanders, Inc.	256
Hosiery Patents Incorporated	158 & 187
E. F. Houghton & Co.	427-428
Howard Bros. Mfg. Co.	442
Howes Publishing Co.	156-157-188-189
Hyde-Rakestraw Co.	441
Hygrade Sylvania Corp.	178
I	
Imperial Rayon Corp.	190-191
The Industrial Dryer Corp.	14-15
International Nickel Co., Inc.	16-17
Loyal T. Ives Co.	192-193
J	
Jacquard Knitting Machine Co.	142 to 147, inc.
Johnston Mills Co.	287-288
Jordan Mills, Inc.	357
K	
Kahn & Feldman, Inc.	214-215
Kaumagraph Co.	102-103-104-105
Samuel Kassow Co.	53
Katakura Corp.	434-435
A. Kimball Co.	180
Joseph Klumpp Co.	426
Knit Goods Publishing Corp.	91AA
L	
Laconia Needle Co.	216
W. T. Lane & Bros., Inc.	354
R. K. Laros Silk Co.	58-59
Laurel Soap Mfg. Co., Inc.	210-211
Leatex Chemical Co.	42
Percy A. Legge	235
Lestershire Spool & Mfg. Co.	201
Karl Lieberknecht, Inc.	232-233-234-257-258-259
W. C. Lipe, Inc.	404-405
M	
Wm. A. P. MacKnight	353
C. R. McGinnes	356
Markem Machine Company	311 & 318
Merkel Bobbin Company	175
The Merrow Machine Co.	377-378-403
Clarence L. Meyers & Co.	340-341-368-369
The Miller Company	166
L. P. Muller & Co.	312 & 317
N	
National Assn of Hosiery Mfrs. (headquarters)	73-74-75
National Association of Hosiery Mfrs. (Research & Silk Exhibit)	415-416-417-438-439-440
Napthole, Inc.	56
The Narrow Fabric Co.	275-276-293-294
National Carbon Co.	57
The National Marking Machine Co.	62
National Vulcanized Fibre Co.	162-163
North American Rayon Corp.	110-111-112-113
O	
Onyx Oil & Chemical Co.	218
P	
The Pairpoint Corp.	339
Paramount Textile Machinery Co.	266-267-283-284-285-286
Pearl Button Industries, Inc.	393
George B. Pfingst, Inc.	370-371
The Philadelphia Drying Machinery Co.	209
Philadelphia Metal Drying Form Co.	105AA
E. W. Pike & Company	45
Proctor & Schwartz, Inc.	268-269-277-278-291-292
Q	
Quaker Chemical Products Corp.	419
R	
Rayon Publishing Corp.	89-90
The Reece Button Hole Machine Co.	381-382
Robert Reiner, Inc.	410-411-412-443-444-445
G. Reis & Bro., Inc.	50
The Reliance Electric & Engineering Co.	432-433
Republic Steel Corp.	46-47-48-49
Rose Mills, Inc.	194
Royersford Needle Works, Inc.	399-400
S	
San-Knit-ary Textile Mills	44A
Sauquoit Silk Mfg. Co., Inc.	436
Scholler Bros., Inc.	252-253
Scott & Williams, Inc.	130 to 141, inc.
Sees & Faber Co., Inc.	18-19-20
Sellers Mfg. Company	437
Shell Oil Co.	413-414
Shoe Form Company	398
Singer Sewing Machine Co.	226-7-8-9-229AA-262-262AA-263-4-5
Smith Drum & Co.	27 to 35, inc.
Soabar Company	22
Synthane Corp.	167
Sonoco Products Company	96-97-98-99
Southern Knitter	77-78
Southern Mercerizing Company	221
Southern Textile Machinery Co.	374-375-406-407
Morris Speizman	79
Standard Coosa-Thatcher Co.	197-198-219-220
Stop-Motion Devices Corp.	203
Alfred Suter	429
H. Sweetbaum & Co.	418
T	
Textile Age	84-85
Textiles—Incorporated	384-385
Textile Machine Works	300 to 304, inc. 325 to 329, inc.
Textile Trimming and Boarding Machine Co., Inc.	4-5-6
Textile World	114-115-116-117
The Torrington Company	313-314-315-316
Tubular Textile Machinery Corp.	64-65-66
E. W. Twitchell, Inc.	168
U	
Underwear Institute	88
Union Special Machine Co.	305-6-323-4-330-1 348-9-360-1-386-7
U. S. Gutta Percha Paint Co.	251
U. S. Ring Traveler Co.	176-177
U. S. Rubber Co.	106-107-108-109
U. S. Textile Machine Co., Inc.	26-26AA-26BB-26CC
United States Testing Co., Inc.	420-422
Universal Winding Company	148 to 153, inc.

We Who Work in the Dyehouse

By Harris Whitman

WE WHO WORK in the dyehouse naturally run into many perplexing situations that we think of as just every day occurrences. We do what we can to overcome what has happened, and try to figure out means to prevent a recurrence in future dye lots.

Perhaps some of the kinks explained in the following paragraphs will be of aid to other dyers who run into trouble later on.

Spots on Silk Hosiery

The present day thrown silk contains mineral oils and other compounds that while they facilitate the running of the silk on the knitting machine yet they present quite a problem to the dyer. Despite the use of water softening equipment, and a careful check of its operation, these compounds react with the degumming oils and other chemicals to form "spots" that cause much grief to the dyer. We recommend that a small percentage of sodium hexametaphosphate be used in the dyebath to prevent the formation of these spots. Should the spots have been already formed and in the dyebath, this product has the property of "loosening" these insoluble compounds, and holding them in suspension so that they can do no damage.

It is also advantageous to give the dyeing machines frequent cleanings to see that no formations accumulate on the sides and gears of the machines. An easy way to clean the gears is to run a clean rag through the gears as the machine is slowly turned by hand.

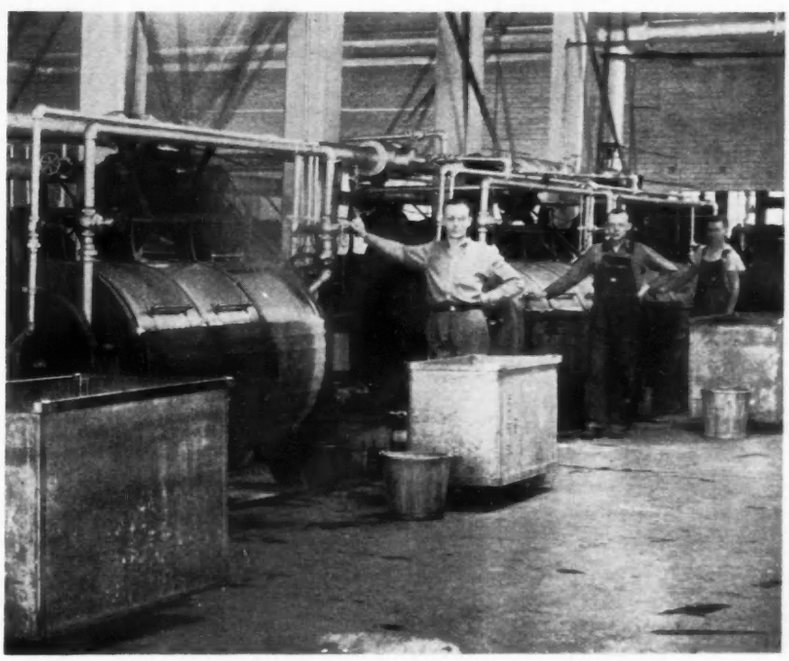
Despite all the precautions that are taken, spotted work sometimes finds its way into the finishing department. The quickest way to remove these spots, provided there are not too many of them, is by rubbing each spot with a spot remover compound (most mills have a good transfer remover that they keep handy) and then sending them back to the dyehouse to be refinished. It is better to do this spotted work this way than to return them to the dyehouse to be scoured and reworked, because scouring them in a hot bath, which is the only way the spots can be removed in the dyeing machine, will cause the shade to be changed. The redyeing of sheer silk hosiery should be avoided as much as possible, as every silk hosiery dyer knows.

Dyestuff Reduction

In the dyeing by the one-bath, or the split-bath method, there is the tendency of the sericin as it is removed from the silk hosiery to act as a reducing agent to destroy certain types of dyestuffs, particularly the sulphoncyanine group, and also some types of silk brown. Much has been written and said about this in the past, and many ideas and experiments have been tried to eliminate this trouble. Quite a few new dyestuffs have been placed on the market claiming to have overcome this reduction of color, but in one plant the trouble persists. This dye reduction is not uniform in its action, because frequently some stockings dye all right, while others in the same lot have been dyed unevenly. There is not much that can be done to help the matter except to try to use the types of dyestuff that do not react as much to this action as other dyes do. A funny thing about this trouble is that you might be having the trouble in your dyehouse, while in the next town another dyer using the same dyestuff does not have it. The easiest way, in my opinion, to overcome it is to dye your silk hosiery by the two-bath method.

Penetration of Dyestuff

Another of the problems that dyers of silk full-fashioned hosiery frequently experience is that of securing proper penetration of the dyestuff in the reinforced heels, toes and tiny seams of the



To the Thirty-Sixth Annual
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Under the joint auspices National Association of Hosiery Manufacturers and Underwear Institute
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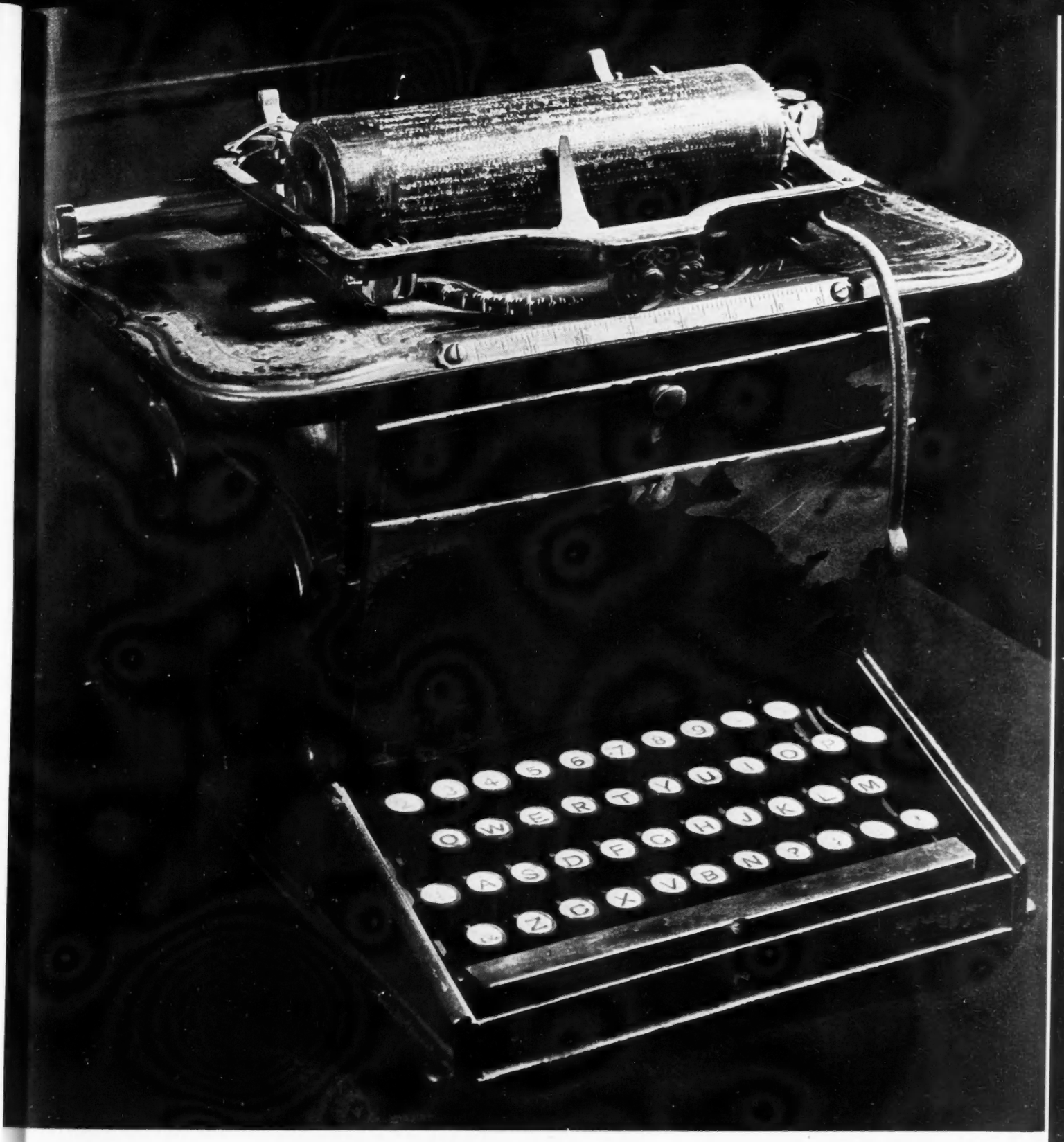
If you can use additional tickets for the Show, let us know. Address: Textile Machine Works, Reading, Pa.

"SEE YOU AT THE SHOW"

A sincere, hearty welcome awaits you at Full-Fashioned Machine Headquarters.

P.S. Reserve a day to visit us at Reading and see the new developments in full fashioned Knitting



"Times change, and we change with them"
CELLARIUS

In a 40-hour week the new READING high-production twenty-six section forty-five gauge full-fashioned knitting machine produces 97 per cent more volume and 116 per cent more value than the ordinary eighteen-section forty-two gauge machine.

TEXTILE MACHINE WORKS • READING, PA.

stockings. First it is necessary that the natural sericin be removed from these places, and then the addition of suitable penetrating agents should be made that thoroughly wet out the hosiery before the dyestuff is entered into the bath, and force the dye, when it is added, to go into these tight places. Another source of inadequate penetration is caused by too rapid adsorption of the dyestuff on the hosiery. The addition of certain sulfated oils, fatty alcohols or soaps will retard the dyeing speed of these dyestuffs to such an extent that they go on the goods slowly and thus evenly. An investigation should be made of the rate of exhaustion of the different dyestuffs that are used, and those that exhaust too rapidly should be eliminated.

Chafed Colored Heels

In the dyeing of black, blue and other colored heel styles, where the heel is constructed from a resist-dyed boiled-off silk, the additional boiling-off and dyeing process, regardless of the method used, has a tendency to produce a streaked overworked appearance on the heel. A simple remedy for this is that of dyeing the hosiery on the reverse side, and subjecting this side to the apparent chafing that takes place. Then when the hosiery has been dyed, the stockings can be turned by hand. It will simplify turning if the goods are turned before finishing, because they can be extracted dry, turned, and finished, and then properly extracted for boarding.

Control of Finishing Bath

A point of interest to dyers of silk hosiery that are troubled by the change of shade in finishing the stockings with the large amounts necessary to attain the proper feel and appearance is that the dulling agents are usually on the alkaline side, the splashproof compounds on the acid side, and the lubricating or softening oils usually on the alkaline side. It is therefore of great importance to always try to control the finishing action so that when the goods are sampled to determine whether the proper finish and shade has been attained, that the bath is on the alkaline side, since this is what

A Dyer

the goods were when passed in the dyebath, and if kept that way, no serious shade change has taken place. Proper and understanding control of the finishing bath will prevent off shades and help to minimize sleazy finishes.

Care should also be taken that the finished hosiery are extracted properly with the correct amount of finish remaining to permit the boarders to draw the stockings on the forms, and upon drying have the desired appearance and feel. The success of the finishing procedure depends upon the skill and the good work of the boarding department, and it is imperative that these two departments work in cooperation with each other.

Light for Shading

Another source of worry to the dyer are the dye lots that are sometimes returned to the dyehouse to be reworked, or redyed, due to the colors being off-shade. The dyer wonders how these colors could have been passed by him. It is possible that the reason that the shades are passed which are not good matches are due to the light being faulty at the time the shade was passed. It could have been passed late in the afternoon when the daylight was hazy, and at a time when the dyer was tired out from a hectic day and his eyes were not as alert as they should have been. Possibly he had worked with the shade so long that to him it was a good match, considering the trouble that he had already been through trying to get what he had.

Experts in the theory of light and color tell us that light is the body of color, and different colors are due to their different powers of absorbing and reflecting the light rays. When the light rays strike an object, some enter it, or are absorbed, while others are thrown back, or reflected. Thus it is by the reflected rays that we see the objects and their colors.

The dyer should work at a window that gives him the north light without any reflections caused by brick walls, chimneys, green lawns, or other buildings. It is advantageous to have at hand a good daylight lamp which the dyer can use at times when the daylight is not at its best. It has been said that good results can be had if the dyer works under a daylight lamp at all times, but this forces the dyer to keep his eyes under a severe strain.

In conclusion, one of the most frequent causes of trouble in the hosiery dyehouse is the carelessness of the dyehouse helpers. This is not to be taken as a reflection of the ability or the sense of responsibility of the average worker, but every dyer, despite all the care and instructions that he gives to his men, has had to listen to any or all of the following expressions: "I accidentally kicked out the wrong dyebath," or "I thought you said drop out part of that bath," or "I put the wrong lot in that machine". Most dyers have had this experience, and worse happenings that involved quite a bit of expense and headaches in order to remedy the damage. We have found that the best means of giving instructions is to write out everything that is to be done, and give it to the men.

A Foreman Dyer's "If"

If you can dye and not grow tired of dyeing,
And spend each day in calmly passing shades;
If you can watch your dyers lose their tempers,
And coolly view the mess that's some times made;
If you can watch the many snags that crop up,
And smile and quietly speak instead of swear,
And hear the many threatenings that are uttered,
And go about as though you did not care;—

If you can see the shades you thought were splendid
Sent back in ways that careless work implies,
And see the stains and faults that you are blamed for—
Yet speak no ill nor let your temper rise;
If you can see a cross-dye dyeing solid
Or see it dyed the other way about,
Or find a satin temperature at ninety,
And still don't feel inclined to bawl and shout;
If you can hear and not grow tired of listening
To all the things that foremen dyers hear,
If you can tell your manager your feelings
When things go wrong and show no sign of fear,
If you can do these things that I have written,
If you can pass this foreman dyer's test—
Then I'll be proud to know that when I meet you,
I'll see a foreman dyer at his best.

—"The Dyer".

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MEN'S UNDERWEAR
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Pre-Boarding Nylon Hosiery

By Thomas S. Schermerhorn

NYLON, the new synthetic yarn which the DU Pont company is offering to hosiery mills throughout the country, has added a new operation to the manufacture of stockings. Due to certain physical properties of the nylon yarn, it has been found necessary to "set" the shape of the stocking before it is dyed. If this is not done, (if the nylon stocking is handled in the same manner as a silk stocking,) the finished hosiery retains those creases which it assumed in the dye bath.

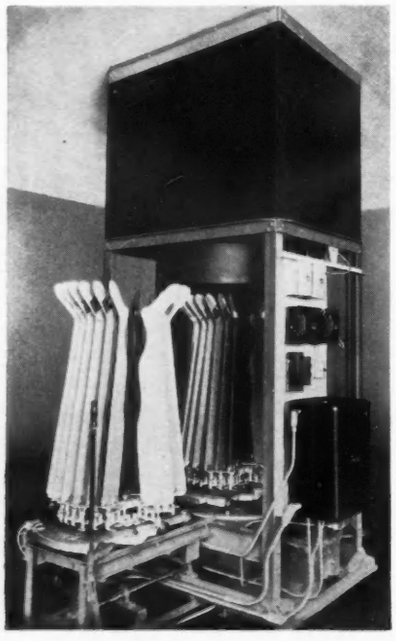
At first, various methods of "pre-boarding", or "setting", the stockings were tried. Subjecting the hosiery, on forms, to a treatment of boiling water for ten minutes, then keeping the dye bath below 180 degrees F., produced good results. Another method was placing the stockings, on forms, into a drying chamber and treating them with steam at atmospheric pressure. Good results were also obtained by this process.

The third process is that in which the nylon stockings are placed, on forms, in a pressure chamber and subjected to live steam at a pressure of from 5 to 15 pounds. (In some few cases higher). This method has been found capable of producing excellent results in a short length of time; the time necessary to steam the stockings varies from 2½ minutes to 5 minutes. The necessary time to properly "set" the nylon hosiery seems to vary directly with the pressure. In other words, if a good result is obtained by steaming the stockings for 5 minutes at 5 pounds steam pressure, comparable results should be realized by steaming for 2½ minutes at 10 pounds steam pressure. This third, or pressure method has been adopted by several machinery manufacturers as a basis for pre-boarding equipment.

Of the various types of pre-boarding equipment there is one machine which is almost entirely automatic (Fig. 1). This machine has two sets of 24 hosiery forms each, mounted on movable carriages. These forms are made of rolled sheet aluminum, with an extremely hard, smooth, anodized finish. They have that thinness and flatness so necessary in pre-boarding nylon stockings for the finest results. Each form has a detachable toe, whereby the foot size may be changed in a few seconds.

The method of operation, entirely done by *one* operator, is quite simple. One carriage is placed in the boarding position. Let us assume that the 24 forms on this carriage have on them 24 stockings which have been subjected to the pressure treatment. They are now ready to be stripped. The other carriage is under the pressure chamber. The operator pushes one button which starts the chamber descending, then pushes a foot button which starts the board carriage revolving. Each form stops directly in front of the operator. These forms are slanted slightly away from the operator, which is the most comfortable boarding position. The operator strips one stocking and drops it into a basket or dye bag placed in a convenient position. (It is not necessary to lay the pre-boarded stocking out flat, as it still has to be dyed.)

The operator then pulls a stocking on the form. The nylon stocking is dry, and can be boarded more swiftly than a damp one. The carriage then turns enough to allow another form to come to rest in front of the operator (Fig. 2). The speed at which the carriage revolves may be varied to suit the oper-



Illustrations courtesy Proctor & Schwartz, Inc.

Fig. 1. Single-operator pre-boarding machine for nylon. Front, semi-side view showing pressure chamber in raised position.

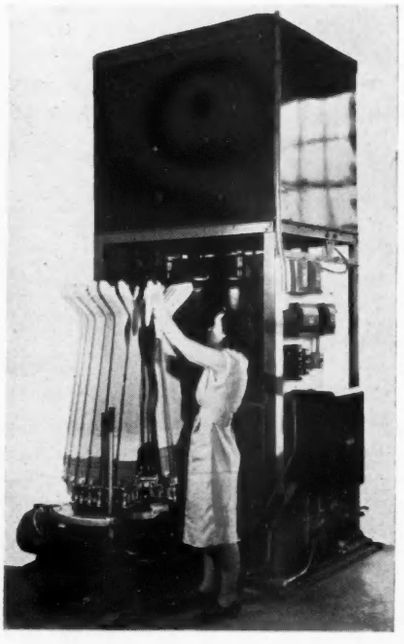
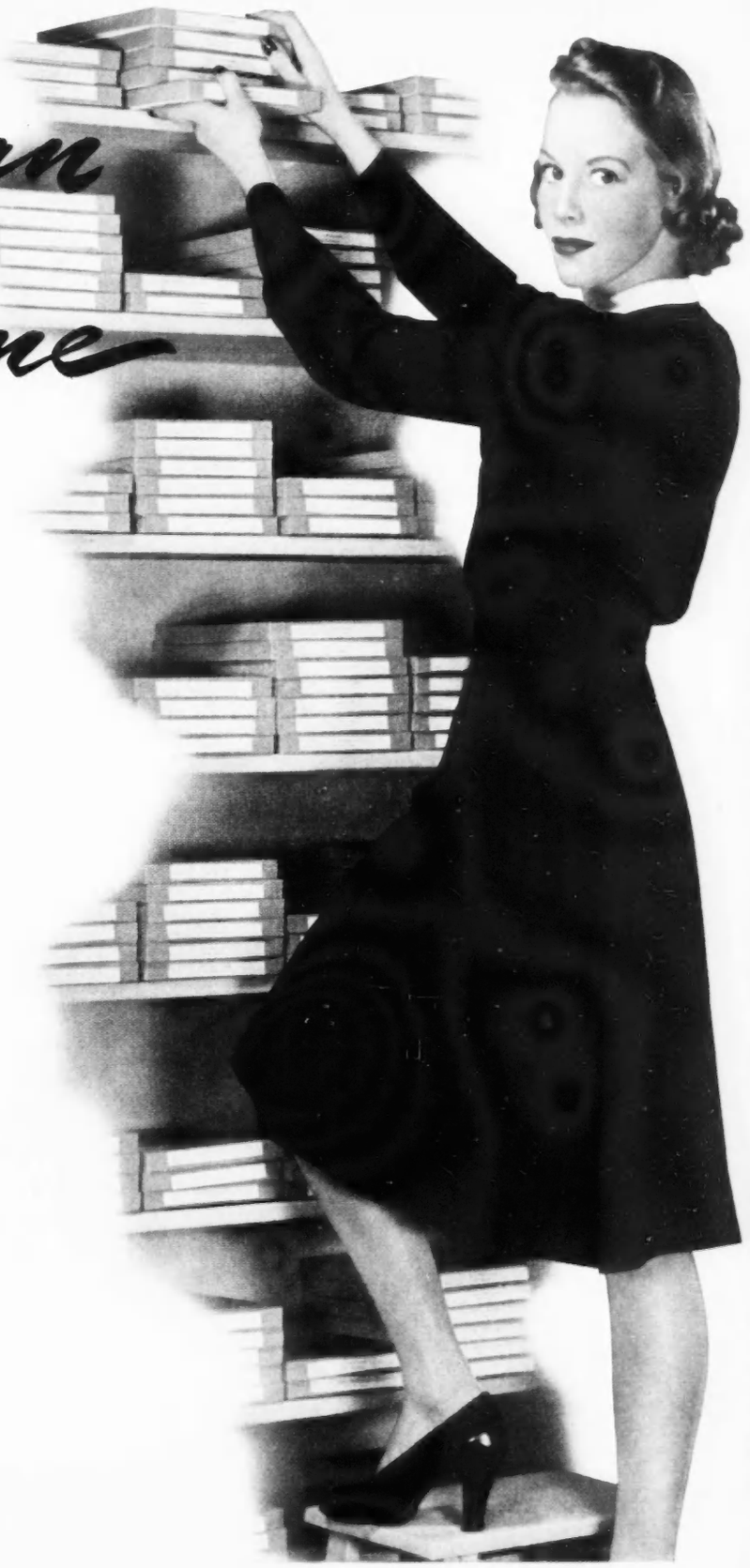


Fig. 2. Operator stripping boarding stockings on forms of one carriage of pre-boarding machine, while the second carriage containing boarded stockings is in pressure chamber (which is in lowered position).

They mean a lot to me



"If you had a job like mine you'd be as careful as I am about the kind of stockings you'd buy. I'm on my feet all day and that takes a terrific toll in wear and tear. I'm interested first in strength and run resistance, but sheerness is important, too. Luckily, I've found a brand that gives me all three—for which I'm grateful, because it gives my budget a break."

A big percentage of every hosiery manufacturer's market is made up of working girls who are expert critics of stocking quality. If your product gives their budget a break, you will find it reflected in sales and re-sales. One of the ways to achieve strength, durability and sheerness in hosiery is to use the most uniformly made, smoothly finished needles you can buy. Torrington's are the choice of experienced manufacturers because they are machine-made, machine-finished and machine-tempered to assure the utmost in smooth, uniform quality!

ESTABLISHED 1866

TORRINGTON

Needles and Sinkers

CAMERA REVEALS SECRETS OF FULL COUNT, CLEAN, RUST-FREE TORRINGTON NEEDLE PACKAGING

PHOTOS SHOW HOW NEW AND UNIQUE TORRINGTON METHODS ASSURE CLEAN NEEDLES AND AN EXACT COUNT OF 50 IN EACH PACKAGE

Here you see why there is an exact count of fifty needles in every Torrington envelop and why they arrive at your mill in such clean, rust-free condition.

First, the counting is done by trained workers who place the needles in the slots of a bar which has five sections of fifty slots each. When the sections are filled the operator turns a knob which drops the bar below the level of the table and leaves the needles lying in neat, separate groups of fifty.

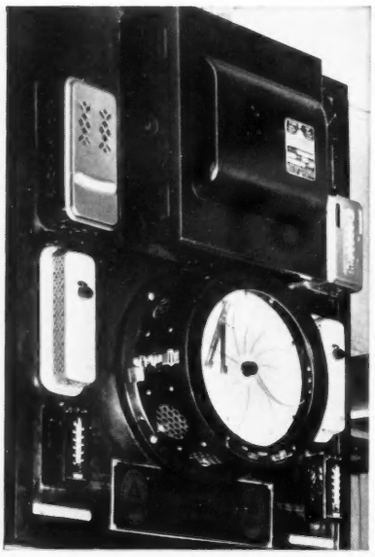
The operator then deftly slides each group into an envelop—five envelops, 250 needles in each box. The envelops used are exceptionally strong, tough—and acid-free, too. This means that the needles are not only well protected against damage but against rust and dirt. To further assure safety and cleanliness the packaging is done in air-conditioned rooms where the temperature and humidity are maintained at the most favorable levels!

Labelling, too, is systematized for users' convenience. Each label is marked with the style, shape, gage and system number of the needles it contains. This simplifies handling in the customer's mill, makes identification quick and easy, prevents needles from getting mixed, facilitates distributing and re-ordering.

Let the care and precision of Torrington Needle packaging help you achieve greater needle economy and efficiency in *your* mill.

COUNTING. *Here needles are being counted mechanically in bar slots to eliminate the possibility of error. Each section of the bar contains 50 slots.*

PACKAGING. *Each group of 50 needles is then put into a strong, acid-proof paper envelop to guard against dirt, rust and damage in handling and shipment.*



(Below) LABELLING. *Envelops are stamped with style, shape, gage and system number that assures easy identification for users and prevents needles from getting mixed.*

(Left) AIR CONDITIONING. *Special air-conditioning equipment maintains the temperature, purity and humidity of air in the packaging rooms at the most favorable levels.*

TORRINGTON
LATCH NEEDLES

THE TORRINGTON CO., TORRINGTON, CONN., U. S. A. • ESTABLISHED 1866

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The Torrington Co., Inc. . . . 200 Fifth Ave., New York, N. Y.
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The Torrington Company, Guilford Bldg., Greensboro, N. C.
The Torrington Company, 210 South Street, Boston, Mass.
The Torrington Company, 1709 Locust St., St. Louis, Mo.
E. G. Paules . . . Bendix Building, Los Angeles, Calif.
The Torrington Co., Ltd., 137 Wellington St. W., Toronto 2, Ont.

Factories at: Torrington, Conn. Orange, Mass. Bedford, Quebec. Coventry, England. Aachen, Germany

ator's speed and skill.

By this time, the pressure chamber has seated itself and the steam turns on automatically, swiftly building up to the desired pressure.

The operator continues to board (Fig. 3), and when the 16th form comes to the boarding position the steam inside the pressure chamber shuts off automatically and is exhausted. When the 20th form comes before the operator the pressure chamber automatically starts to rise, and when the operator has finished boarding the 24th and final form, the pressure chamber is in the raised position (having stopped automatically at the proper height), and the cycle is ended. The operator then pushes the carriage underneath the pressure chamber (this in turn moving the finished carriage), pushes the button which starts the chamber down and the entire cycle is repeated.

Fig. 3. Operator boarding nylon stockings on single-operator pre-boarding machine. Pressure chamber in lowered position.

As may be clearly seen, the operator devotes all of his or her time (excepting the few seconds necessary to push the board carriages through the machine) to actual boarding.

The approximate production on this nylon pre-boarding machine easily ranges from 13 to 15 dozen pairs of nylon stockings in one hour, depending on the skill and speed of the operator. The nylon stocking being dry when boarded makes the "pull on" much faster. And since the stocking may be "stripped" and dumped in a hand sack without regard to creasing, this operation is also much faster.

Controversies have arisen over the shape of the new pre-boarding form. Many experiments have been tried, and the general results have shown that the form should be slightly narrower in the leg than the finishing board.

(In the near future, "Cotton" will carry further information on manufacture of nylon hosiery.)

An Eye on the Knitting Mills

At Mount Airy, N. C., more than $75,000 in public subscriptions has been raised for stock in a proposed full-fashioned hosiery mill. The cost of construction has been set at $200,000, with half to be raised locally and the remainder to be put up by Hugh Grey.

A proposal has been made to the Cumberland Cooperative Company, Cumberland Homesteads, Tenn., for the establishment of a $110,000 textile plant. The mill would be a cotton spinning and knitting company, designed to employ 200 homesteaders.

Vance Hosiery Mills, Inc., Henderson, N. C., have been granted a charter to manufacture men's hose. Incorporators are J. W. Jenkins, R. C. Gary and C. A. Beckwith. New machinery has been ordered.

Quakertown, Pa., will soon have a new full-fashioned hosiery mill, operated by five of the town's citizens. Several full-fashioned machines will be operated.

Republic Hosiery Mills, Inc., Detroit, Mich., have applied for a charter with authorized capital of $80,000. Type of goods to be manufactured have not been announced.

Providence (Ky.) Textile Association, which owns an unused hosiery mill, is expected to permit this plant to be re-opened by W. M. Kohl and his wife.

May Hosiery Mills, Inc., Burlington, N. C., are constructing a small addition to the full-fashioned plant. The addition will be used largely for storage purposes.

Williamson Hosiery Mills, Englewood, Tenn., a recently-organized concern, has installed 14 machines for manufacturing anklets for children and ladies.

Work is well under way on the new hosiery mill to be located at Athens (Ala.) College; it will be used to provide employment for students working their way through college.

Hudson Silk Hosiery Mills, Charlotte, N. C., have installed new extractors made by the Philadelphia (Pa.) Drying Machinery Company, and sold through F. W. Warrington Co., Charlotte.

Davis Full-Fashioned Hosiery Mills, Inc., Greenville, N. C., is building a $15,000 addition which will house dyeing, finishing and packaging operations.

Magnet Mills, Inc., Clinton, Tenn., will install several new 51-gauge Reading full-fashioned machines as part of an expansion program.

Taxpayers of Ellisville, Miss., have completed and passed on plans for an independent hosiery mill to be located in the town.

Custom Dye Works, Inc., New York City, have filed papers of incorporation to handle hosiery, with authorized capital listed as $50,000.

Cooksville Hosiery Mills, located near Vale, N. C., has completed its new building and 22 seamless hosiery machines are being operated.

Standard Knitting Mills, Knoxville, Tenn., is progressing on the construction of an addition to provide storage space.

Gold Star Hosiery Mills, Inc., New York City, have filed articles of incorporation.

Martin Brothers, Middleboro, Ky., are reported to be erecting a seamless hosiery mill.

As I See It

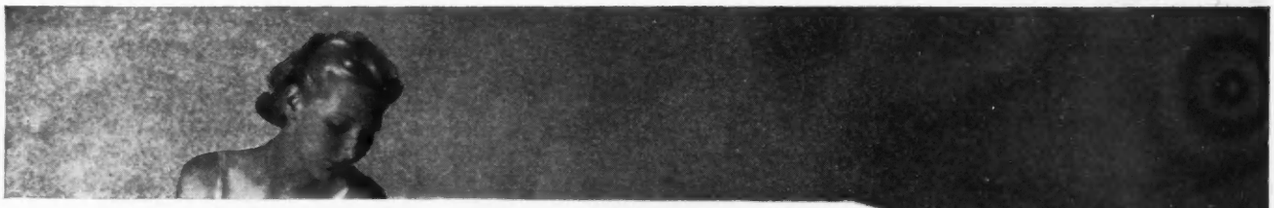
Foremanship has changed a great deal in the last twenty-five years.

"Hard-boiled" foremanship has been replaced by considerate foremanship.

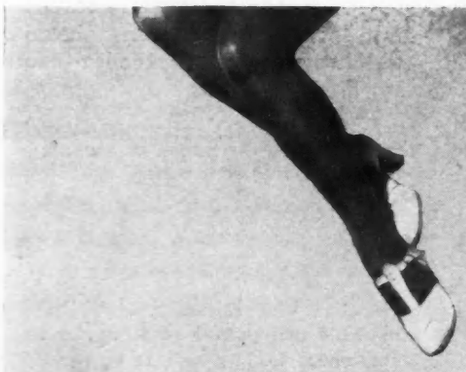
"Drivership" has been replaced by leadership.

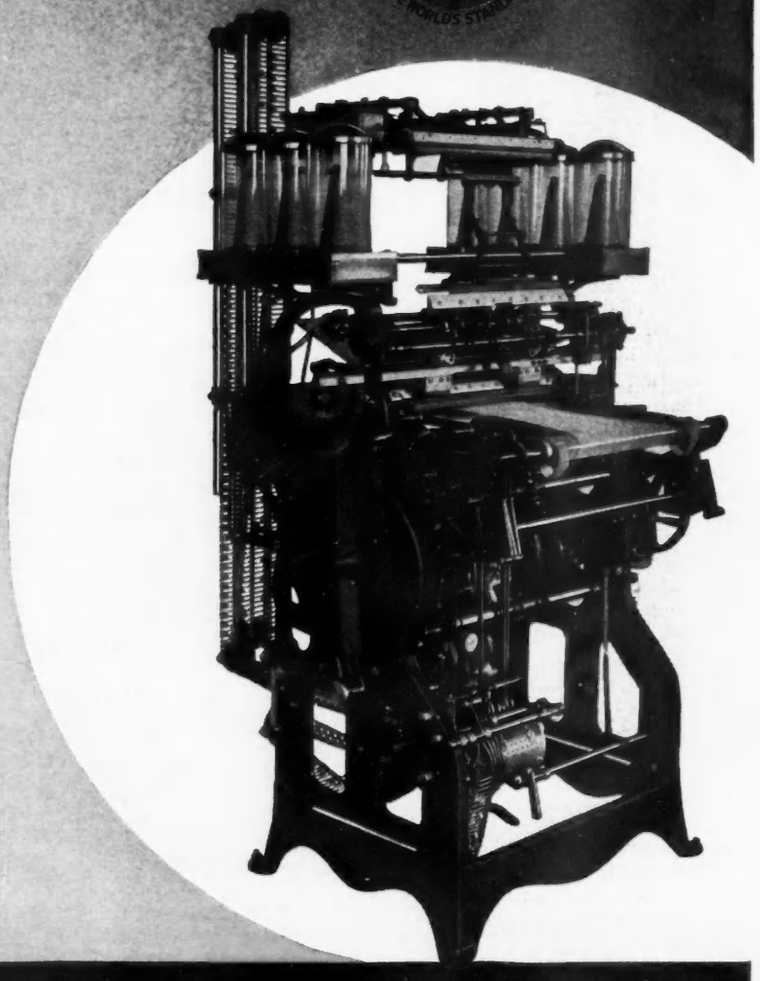
Foremen, with technical qualifications only, have been replaced by foremen with a proper balance of technical knowledge and the understanding of how to deal with people.

If you have not kept up with these changes, you are exceptionally lucky if you are still holding a job as a foreman.—*Glenn Gardiner.*



Women are inspecting stockings much more critically these days!





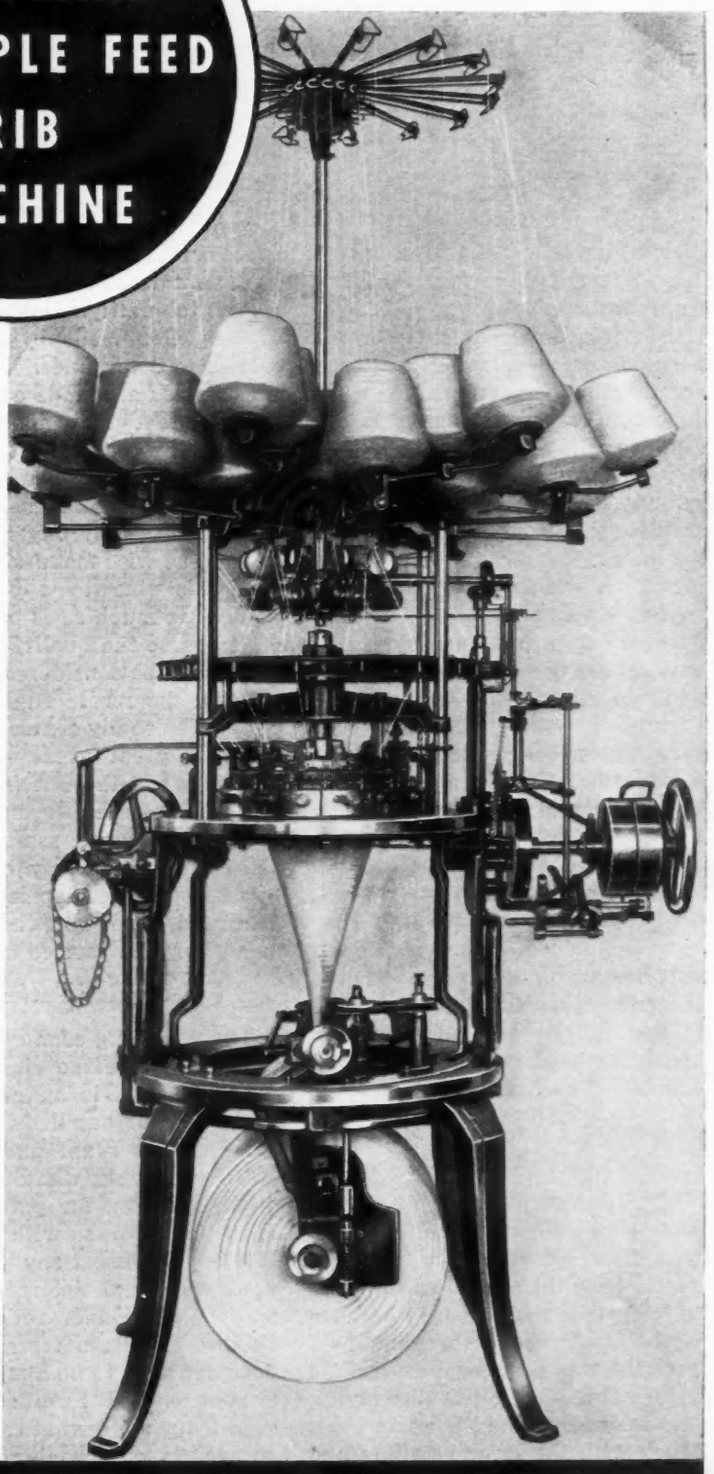
They are smarter buyers than ever. They're refusing to buy silk stockings at any price, that show bad matching, an inevitable result of using leggers and footers. The WILDMAN Single-head, Single-Unit machine knits the entire stocking in ONE operation, perfect from top to toe. It turns out a product that completely satisfies today's most critical buyer. Let us send you complete details.

WILDMAN MANUFACTURING COMPANY
NORRISTOWN, PA.

The Modern

WILDMAN SINGLE-HEAD, SINGLE UNIT FULL-FASHIONED HOSIERY MACHINE

WILDMAN MULTIPLE FEED RIB MACHINE



AN ever-broadening style market in knitwear is bringing to manufacturers new opportunities for increased production and sales.

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Style Development Department in Seamless Hosiery Mill

Article 1

By Frank Boyd

WITH THE CONTINUED increase of demand for fancy hosiery many mills are finding it beneficial to create departments for the purpose of developing patterns and fabric constructions. The work done by these departments is varied according to the class of hosiery produced by the plant and the amount of style changing necessary for this production. Some of the larger concerns which manufacture a wide variety of fancy hosiery employ a group of several persons whose full time is devoted entirely to style development work, while in some of the smaller mills this work is mapped out by the knitting superintendent or foreman, and the machine work done by one of the more experienced fixers.

But whether the number of styles produced annually by a mill are only a dozen or so, or if they total a hundred or more, which is not uncommon for some of the larger manufacturers, it is vitally important that much care and consideration be used in the development of each style.

Keeping Up with the Market Trend

The designer must use every means possible to determine the type of styles, etc., that will be in demand for the season ahead. This in itself is a difficult task because of the fickleness of the public, especially the younger people. To aid in forecasting popular styles, the designer should keep in close touch with the large retailers and get their ideas on what they think will be good. Valuable information along this line can also be gotten from the sales department and jobbers.

Fancy hosiery is sold first by appearance. If a sock is not attractive it doesn't matter how good it is as to quality. It will not sell. Investigation made by interested parties to determine how the consumer sales are made disclose the amazing fact that about 75 per cent of the men's first class hosiery is purchased by women. And we all know that most women choose what they buy by appearance. The wise manufacturer will style his line to appeal to the women, as much as is possible.

Of course the quality of the hosiery must be considered, especially from the resale angle, but the quality is usually controlled by the price to a great extent. And if the quality is not there it will be very obvious in the appearance.

I will enumerate some of the assignments which may be handled by the style development department and detail how these assignments may be carried out.

Designing Patterns

The designing or creating of the pattern will be the first thing to discuss. This is an art and the person who handles this work must be observant and have the ability to apply what he sees, in practical form, for pattern possibilities. A person with this talent can look at almost any kind of figured work and determine how it may be altered or rearranged to fit into a pattern for hosiery. He does not have to be a machine fixer but should have a thorough knowledge as to what can be made on each type of machine he has to make patterns for. A complete analysis of the pattern possibilities of each type of machine will be found helpful in this work. For example, suppose he has some Banner 8-Step Wrap machines, for which he must design patterns. The analysis of the machine will be as follows:

Banner 8-Step Wrap Machine: Steps available for pattern, 8 individual, number of steps can be doubled by use of long and short butt jacks but short jacks must be used in conjunction with corresponding long butt.

Length of Selector Drum: Maximum of 36 moves. Cycle can be shortened by "overkick", which racks two moves per kick.

Steps Can Be Divided: Into two groups, (as head and stem in clock), by the action of a bracket of screws controlled from the main drum, thereby obtaining two different cycles of 36 kicks each.

Kicking Arrangement: As required by the pattern, the selector drum may be kicked: Once every four courses; or once every two courses; or three times every four courses; or once every course.

Idling Selector Drum: For patterns not using horizontal stripes, selector drum may be idled by high pins on right of main chain. When striper is used, selector drum is controlled by auxiliary drum on main drum shaft.

Selection of Steps: Low cam on selector drum selects long butt jacks, no cam selects long and short butt jacks, high cam holds selector out to miss jacks.

Jack Control Butts: Numbers 1 and 8 steps on all jacks must have extra short butt where these steps are not used in pattern. The number 1 is used as guard butt and the number 8 is used to elevate the jacks into position for selection.

Color Change: Two rows of color change cams are employed when the steps are divided, in order to have two distinct groupings of color changes. This requires the use of

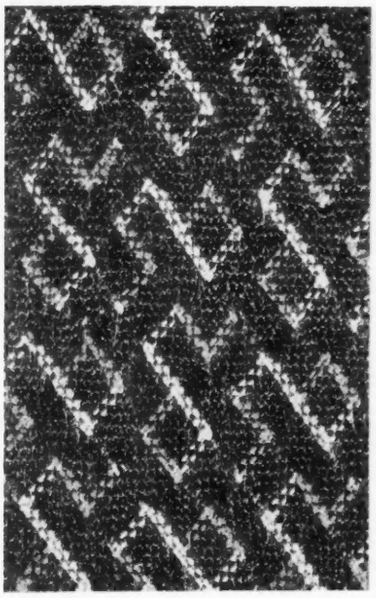

Fig. A

the "split-level" color change attachment, which is controlled by the same lever that operates the bracket of screws used to divide the steps.

As an illustration of how ideas for patterns may be obtained,

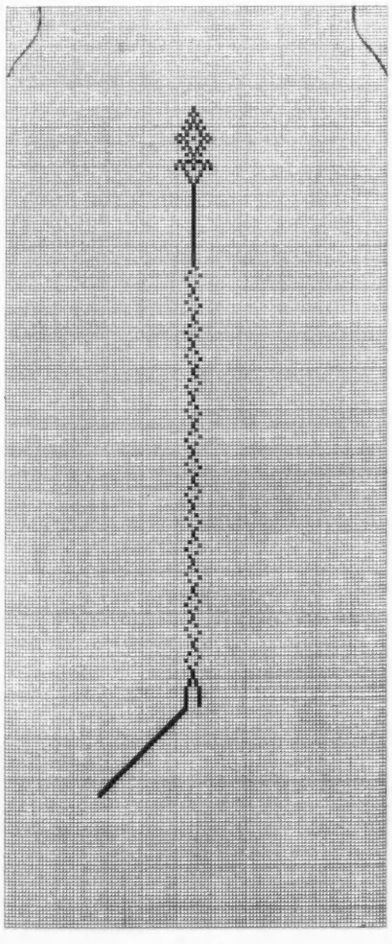

Fig. B

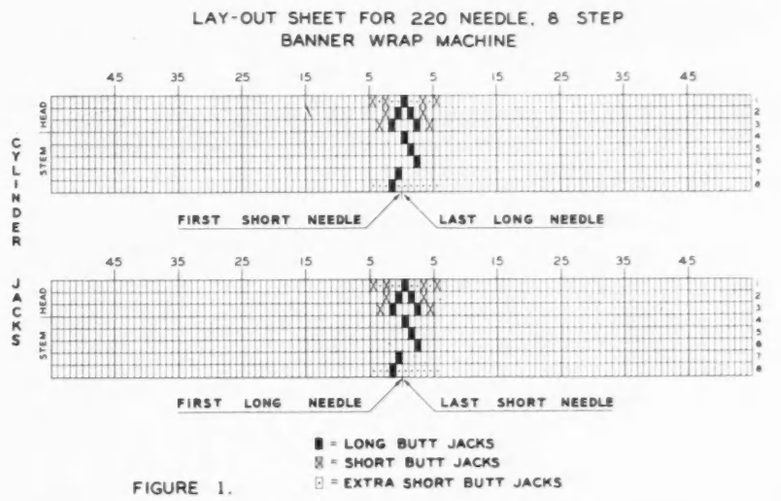

FIGURE 1.

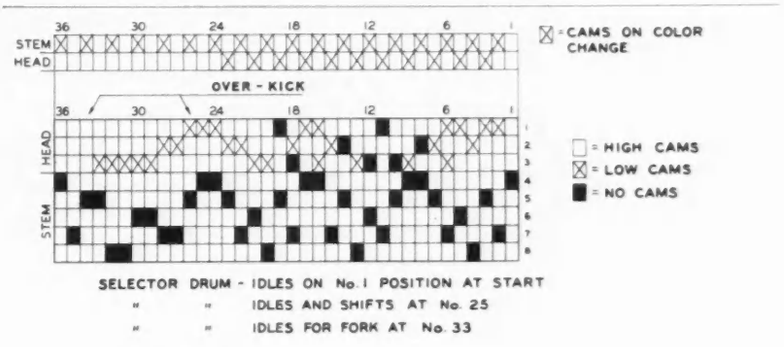
STEM
HEAD
36 30 24 18 12 6 1
OVER - KICK
= CAMS ON COLOR CHANGE
= HIGH CAMS
= LOW CAMS
= NO CAMS
SELECTOR DRUM - IDLES ON No. 1 POSITION AT START
" " IDLES AND SHIFTS AT No. 25
" " IDLES FOR FORK AT No. 33

FIGURE 2.

shown herewith is a necktie, (see Fig. A, of unusual design, from which an attractive pattern for a clock, panel, or all-over figure set-up can be made. I only select the part of the design that appeals to me most as being practical to use as a pattern for a sock, which is the two-color diamond effect. Assuming that I wish to make a clock on the Banner 8-Step, wrap machine, I will use the two-color diamond design I have selected and by linking them together, will use them as the stem of the clock. The two-color diamond as pictured on the tie is not especially attractive because of the shape of the figures, but is outstanding because the color arrangement catches the eye. And to keep this color arrangement, I must get a color-beside-color effect on a machine which is not equipped as a color-beside-color pattern job.

The first thing to do is draw my pattern on graph paper. (see Fig. B). Picturing each dot as a stitch and using two colors, I get a fair idea as to how the design will look, even before it is made into a sock. Keeping in mind the fact that I have only eight individual steps available, and am featuring the design in the stem of the clock, I draw that part first. After some experimental sketching to get the best effect possible with the least number of steps, I find that five steps are required to get the effect I desire. This leaves only three steps with which to make the head and fork. That makes it necessary to use both high and low steps in the head to get a design that will balance the clock. It is essential that the head of the clock harmonizes with the stem, so I draw a pattern that will give an effect of color-in-color, following the diamond shape similar to the stem.

Having worked the pattern out as to what I think is the best arrangement, I now make the lay-out for the machine set-up. A special lay-out form, (see Figs. 1 & 2), which shows all the necessary changes that must be made to set the machine up on the pattern, will be found very helpful. This lay-out form is self-explanatory and any experienced machine fixer can change the machine to make the pattern by following the directions it gives.

KNITTING KINKS

Operating and Fixing Model ES Machines

Article 12

By Emmett Starr

• This is the twelfth article in a series* concerning the care, operation, and fixing of the Model ES machine. The series is written with the assumption that the reader has before him the S & W catalog of parts pertaining to the machine. Should you wish any particular phase of fixing discussed, the author will be glad to do so upon request through the editors . . . . . .

IN OUR last article we discussed two features of the pattern mechanism. The third feature is the selector drum (3794) Plates 13 and 16, which has 96 slots or racks. There are two jacks in each slot; the lower jacks which have 18 butts are used for patterning while the upper jacks which have four butts or two wide butts are used for changes in colors. These four butted jacks control two fingers, each finger contacting with two rows, due to their greater thickness than the other selector fingers. When using the jacks with the wide butts each finger contacts one row.

The selector drum shaft (11440) Plate 13, on which the drum is located, is held in position by selector drum shaft lower pivot (11339) and top pivot screw (11333). The shaft must be in alignment in order that the drum will turn true. When the selector drum does not run true it will be impossible to adjust it properly as the butts on the upper part of the jack will contact the upper selector fingers just right while the butts on the lower part of the jack will either contact the selector fingers too soon or too late, and when adjusting the drum to take care of the lower selector fingers the upper portion of the drum will either contact the upper selector too soon or not soon enough. In this event it will be necessary to check the selector drum shaft.

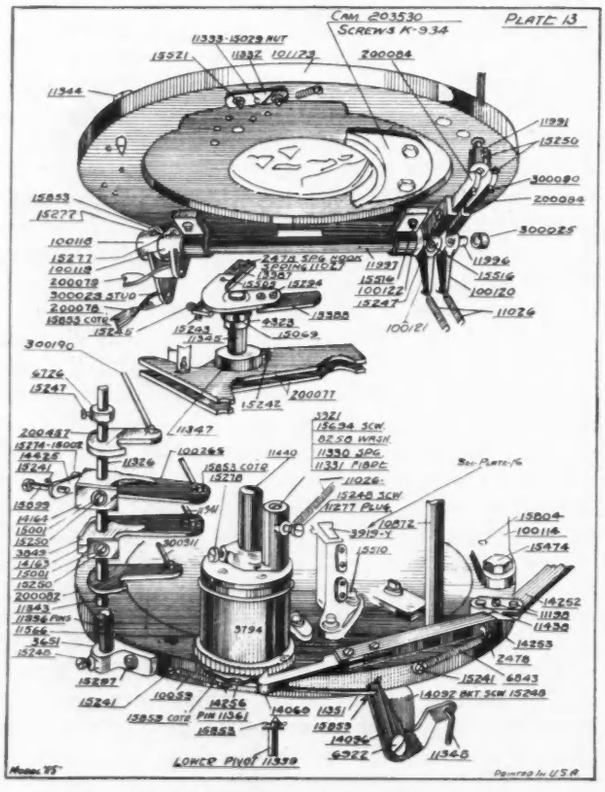

Plate 13, Model ES Catalog of Parts

The best method in aligning the shaft is to place the shaft in position after the drum has been removed. Turn the top pivot screw down until there is no up or down play of the shaft, tighten pivot screw nut (15209). Place a gauge, a small square, scale or a straight piece steel no longer than the shaft to hold the gauge so that it rests squarely on the bed plate near the shaft; then it can be readily seen if the shaft is out of alignment.

The lower pivot being eccentric is used in the adjustment of the shaft as well as the top pivot screw which is held in position by the top pivot screw bracket (11332) Plate 13. The bracket is located in front under the top bed plate. The holes in the bracket are large enough to allow for necessary adjustments. It is possible to adjust the shaft without removing the selector drum, but it is a hit and miss way of doing it.

After the shaft has been properly aligned, tighten the top pivot screw, bracket screws (15521), and drum pivot setscrew (15253) Plate 14. Also, when the selector drum has been replaced and the top pivot screw turned down to hold the shaft in place do not fail to tighten the top pivot screw nut.

A certain amount of friction should be applied to the selector drum so that during the racking process the drum will not jump forward or move backwards. It isn't necessary to put so much friction on the drum that it can hardly be turned by the hand.

The selector drum being too low will cause the idler lever plate (14256) Plate 13 to act sluggish, not allowing the plate to drop back when released at the start of knitting and also after the comple-

*The other articles in this series appeared in the Knitting Section of the August, November, and December 1938 issues: the January, March, July, August, November, and December 1939 issues, and the January and March 1940 issues. More will follow.

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tion of the heel. This will keep the drum from racking; it may only be for one course, but, when making an intricate pattern where the selector drum must be in time with the chain or with the striper drum when making horizontal yarn changes, this one course will throw the pattern out of time. The drum may only bind the plate occasionally, which makes it rather difficult to determine just where the trouble lies. Every main drum rack that concerns the action of the selector drum should be closely observed to see what is or what is not taking place. The drum should be raised enough to avoid binding the idler lever plate. This adjustment is taken care of by the vertical adjusting screw (11337) Plate 14 located in front under the lower bed plate.

After the selector drum has been raised to allow free action of the idler lever plate it may be too high for the selector fingers, therefore it will be necessary to elevate the fingers by raising the selector finger spacing bracket (100117) Plate 14 in order that the heel of the selector fingers will contact the center of the selector drum jack butts and not the upper or lower edge of the butts.

The selector drum is racked through the medium of a racking lever (3796) Plate 7, racking rods (front 14253 & rear 14252) Plate 13, and racking pawl (14060) from racking cams (14095) Plate 2 on the high speed gear.

By placing four cams on the gear the drum is racked at every revolution of cylinder; with two cams on the gear, opposite each other, the drum is racked every other revolution of the cylinder and by using one cam on the gear the drum is racked every fourth revolution of the cylinder. These cams are adjustable; they can be advanced or retarded thereby racking the selector drum sooner or later in order that the selector fingers will drop in and pull out of action in the center of the heel side of the cylinder or according to the cylinder pattern jack setup. By the use of two kinds of racking cams, one having its contour on the inner edge and the other a wide cam, and by automatically moving the racking rod roller in the racking lever from one position to the other, the racking may be changed from every revolution to every other revolution or from every other revolution to every fourth revolution of the cylinder. The device for accomplishing this change is known as the variable racking attachment. It is timed to accomplish the change at pre-determined places in the stocking by means of cams on the outer diameter of the belt shipper drum.

The selector drum can be advanced or retarded by the racking arm stud (11318) Plate 7, which is eccentric. When enough adjustment cannot be had on the stud in order to get the proper setting of the drum, it will be best to bend the rear racking arm instead of elongating the hole in the arm that fits over the stud.

At the completion of the foot the selector drum is automatically racked to the start or to the idling tooth in order that the pattern of each sock will start the same. There are various causes of faulty adjustments that will hinder the drum from idling; such as a worn racking pawl. If not too badly worn the face of the pawl should be ground evenly; when grinding the pawl try to keep it the same shape and do not take, or grind off more than necessary.

The idler lever plate not adjusted properly is due to the racking rod stud setting screw (15277) Plate 7 not securely fastened, causing a change in the position of the stud; check the selector idling lever (3913) Plate 4 and all parts connected with it, particularly the selector idling lever stud (11182) and the selector idling lever plate (14090). Occasionally the stud and plate may become loosened and for some cause, due to something getting under the left end of the selector idling lever, the plate is apt to become bent.

The reading finger guide post (3919) Plate 16, to which the reading finger guide plate (14065) is fastened, should and must be securely tightened to the jack cam ring and nothing must be under the post to cause it to tilt. The guide plate can be raised or lowered on the guide post and it should be adjusted in order that it will line the selector fingers with the butts of the cylinder jacks and the plate should be advanced far enough so that the selector fingers drop into action and contact the butts of the cylinder pattern jacks, thereby depressing these jacks from action. When a little vibration can be felt by placing your finger to the left of the selector drum, on the selector fingers that are in action, you can feel assured that the guide plate is advanced enough to let the fingers work efficiently.

A quick and simple way of removing the selector drum: remove reading finger guide post, unhook two lower selector finger springs, loosen friction bracket and top pivot screw nut, turn top pivot screw out until even with bracket, then remove drum. There is no need of unhooking all the selector finger springs unless the selector fingers were going to be removed.

The racking lever (3796) Plate 7 should swing freely on the lever shaft (11437) Plate 7 yet should be held firmly down on the shaft by cotter pin so that the lever does not have a tendency of rising up causing the roller to miss the racking cams. Racking lever stop screw (15222) Plate 7, when set and held in place by racking lever stop screw nut (15026) Plate 7, allows the lever to go back far enough in order that the racking pawl can drop back in the next tooth.

Fine Goods on Banner by Changing Needles

EDITOR COTTON:

We have some 176-needle 36-gauge 3¾-inch Banner machines equipped with 36-gauge needles, which we use to make heavy or coarse gauge anklets. Is it practical to make fine gauge goods on these machines by changing the needles to 36-gauge needles with 48-gauge hooks? Should any other changes be made on the machines?

CONTRIBUTOR NO. 7050

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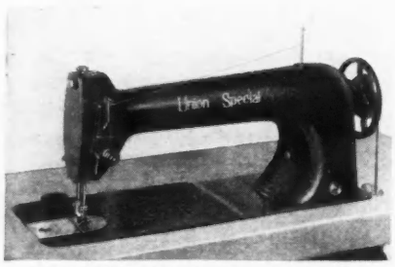

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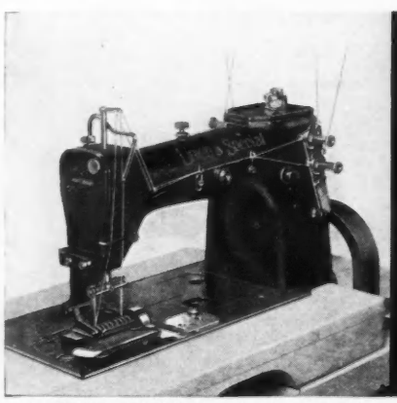
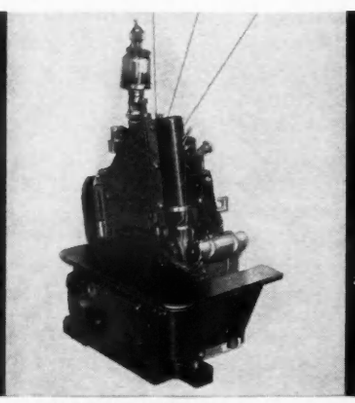
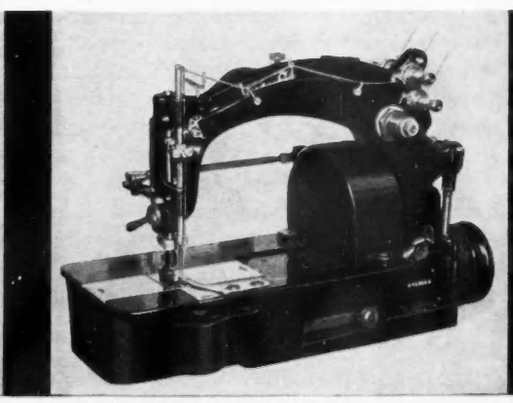


• **STYLE 51700 E.** Modern, high speed two needle flat bed machine for folding and attaching buttonhole facings to all weights of ribbed knit as well as fleece lined undergarments; one operation, self finish front, cut edge facing strip used in long lengths and guided next to feed dog.



• **CLASS 39200.** For seaming with two or three-thread overseaming stitch, overedging, blind stitch welting, or hemming all types of knit fabrics. Flat or tubular work—a style for every job. High speed and quick starting and stopping increase production.



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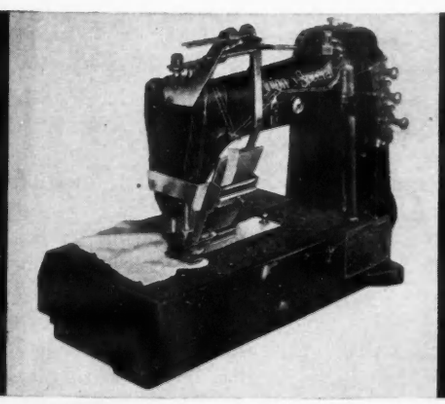
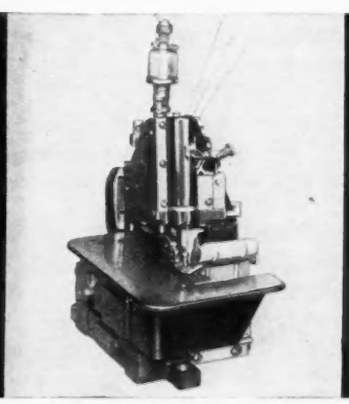
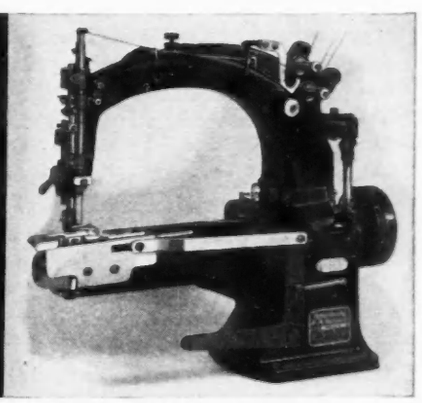


• **CLASS 52700.** Includes Styles 52700 G and H for attaching elastic to knit garments in long lengths, garment lengths or with ends joined. Standard equipment includes automatic stretching device and spool holder for elastic. Style 52700 C for attaching split tube borders to knitted outerwear.



• **STYLE 39200 AH.** For seaming knitted outerwear with the three-thread Union Overseaming Stitch Type 504. Front tandem differential feed and built-in trimmer. Style 39200 AJ is fitted with guide for inserting reinforcing tape into the seam.



• **CLASS 19300.** Machines in this class are designed for hemming necks, armholes, skirts, and trunks of swim suits, and for attaching trunks to skirt. Because they produce the elastic twin needle stitch Type 406, they are also popular for a wide variety of work on all kinds of knitted outerwear.

Streaks in Full-Fashioned

EDITOR COTTON:

In his question on page 177 of the October issue of COTTON, "CONTRIBUTOR No. 6953" has asked the causes and remedies of streaks in full-fashioned hosiery.

The cause of streaks can usually be traced to worn out insides, the small but highly important functioning parts that are necessary to produce a stocking. Mis-adjustment of the machine, sinkers, needles and jacks enter into this also. These parts should not be of different make in the same machine as there is likely to be a slight variation in size. For one machine use the jacks of one manufacturer. The last mentioned is very important for under no conditions whatsoever should two or more different brands of needles, etc., be used in the same machine regardless of personal feelings—or otherwise. Individually, and in small doses, the use of different brands in the same machine might appear practical on the surface but collectively nothing but grief arises from this procedure.

From the tone of the contributor's inquiry we are led to believe that the machines need re-building for he mentions oil—the use of which is evidently causing stripes. This is quite true in cases where sinkers, etc., have reached the end of the trail and need new replacements to insure good fabric. Bear in mind that when sinkers are of no further use the sinker head slots are also worn and with the insertion of oil in the heads it augments the already too free movement of the sinkers. In cases of this sort there is nothing to be done but re-build, have the heads re-cut or the blocks on the ends emeried down by a skilled mechanic. Personally we favor re-cutting of the heads even if the blocks still have to be worked down to the proper thickness because it creates a flush base for the edges of the sinkers, whereas with the other method there is no doubt but that the sinkers are firm in the grooves but they are only held thusly by the lowest points of the slots.

Where stripes have not yet reached the chronic stage an interchange of sinkers will often help to eliminate them. In other words, where there is a comparatively tight line these particular sinkers should be removed and placed in a spot where there is a loose line.

A change of needles will also help at times but only if stripes are not too predominating in numbers. If that exists one can work his head off and there will still be stripes in abundance for it is practically impossible to eliminate stripes successfully under these circumstances except by overhauling the machine entirely. There are many plants today that consider re-building a continual process and they stop a machine as soon as stripes become too numerous and endanger the quality of the fabric. This is a wise program because the seconds derived from operating a machine with worn out insides costs more in the long run than the price of re-building.

New jacks or sinkers should never be inserted in a head that contains parts which have had a chance to wear. Invariably this policy will cause a loose line for the simple reason the new parts are longer. It is better to remove a whole head at one time and use the old parts for individual replacements as needed.

Running two shifts the sinkers should be lubricated generously at least twice a week, the needles twice a day. The jacks also enter into this question and though some of the oil squirted into the sinkers eventually finds its way down into the jack heads they should be oiled separately at least once every two weeks. Stiff and gummy jacks are also a source of stripes.

There is no machine setting that will eliminate stripes if it so happens the job is in need of re-building. If there were such a setting plants would not now be spending thousands of dollars in an endeavor to keep stripes at a minimum.

One very important item is the distance between the sinkers and the verge plates, which in turn is controlled by the slurcock. A divider of the respective gauge of the machine should be placed between the verge plate and the sinkers the slurcock has in direct action. The divider should fit very snug for the best results and this system should be adhered to as much as possible even when adjusting a head for uneven length.

Too much tolerance between the verge plates and the sinkers is the cause of numerous stripes, especially on machines that have been in operation for a period of time and the parts have had an opportunity to become worn.

CONTRIBUTOR NO. 6991

Needle Care

EDITOR COTTON:

As we go through the mill we sometimes see careless knitters who allow poor needles to remain in their machines, thereby causing bad work. A knitter that is always "on his toes" will watch his needles with care, keeping them in shape so that his machine may turn out quality work at all times. We do not suggest that a knitter throw away a needle just because another can be secured easily; it is better to try and plier it into shape because it may last much longer. As a matter of fact, it is a good idea to have each knitter turn over at least 10 needles that have been pliered each day to someone who inspects them; in this way the management can be sure that the job of pliering needles is being done correctly.

Much bad merchandise is caused by the knitter being too tired or too careless to straighten his needles, and in some cases he will discard them when they could have been fixed with little trouble. Some mills require that each knitter turn in one hundred bad needles before he can have another hundred to take their place. Records should be kept on each machine and each operator to determine if any machine or operator is using too many needles.

It is difficult to get the knitters to take excellent care of their needles when more than one shift is run. But to make certain that all knitters are doing their

part in keeping the needles in order, it should be the duty of the knitter on the first shift to see that all his needles are in good shape before he starts up his machine; one or more needles out of line will cause him trouble right away.

This man should not only check his needles, but should make certain that the bobbins are filled so that none will run out, leaving his machine in first class order for the man on the next shift. The same procedure is to be followed on each shift.

The needles on the loopers and seamers are also factors in producing quality merchandise. We have often seen seamers that do not examine their machines and go right on seaming dozen after dozen without knowing that she has a broken needle in her machine. Just think what this needle is doing to the quality of the work, and the loss in production to the operative.

There are many other points that the operatives should notice about their machines, such as lubrication, etc., and they should understand that if they do take care of the machines, the machines will in turn produce more goods of better quality, and the operatives will in turn increase their earnings.

CONTRIBUTOR NO. 7061

Full-Fashioned Menders

EDITOR COTTON:

"CONTRIBUTOR NO. 6980", in his question on page 112 of the January 1940 issue of COTTON, has presented a problem by trying to stop the expansion and contraction of the half-inch cold rolled steel rod that the lace bars are fastened on. He is having trouble with the lace bars going off on one end of the full-fashioned machine that is located near a window.

It is my opinion that there is no way to prevent the expansion and contraction except by keeping the same degree of temperature, but if he will keep the shifting rod and all the lace machine rods wiped free from all greases, oil and water that might accumulate thereon, they will not be so sensitive to the temperature changes.

If needles and points are in good shape and every bar has the same setting on each individual head, an adjustment may be made so that a slight expansion or contraction can take place and not make menders, but this adjustment can't be made unless all points have the same setting.

Probably what causes the trouble is that some points are setting to the right and some to the left, all in the same bar. It can easily be understood that a slight change in temperature either way will cause some of these points to be off and will make menders.

If normal temperature is 80 degrees he should be able to run with the foregoing settings without any trouble, even if the temperature does vary from 78 to 82 degrees. If temperature varies from 75 to 85 degrees, keep a thermometer on the end of the machine where the trouble is occurring and a skilled man can adjust this end of the rod in a few seconds before bad work is made. This plan is actual experience and it works.

CONTRIBUTOR NO. 7060

Sizing Full-Fashioned

EDITOR COTTON:

This has reference to sizing full-fashioned hosiery and is in answer to the inquiry submitted by "CONTRIBUTOR NO. 6952" on page 121 of the September 1939 issue of COTTON.

For sizing, we would say use a man that can be depended upon to work on an average basis. Then build the system to suit this particular individual and then will be developed an average that will carry the mill through the different variations in silk and give the desired result in the boarding department.

This man should set himself a number of courses to work from—say 45 courses per inch in the leg yarn. Beginning at the shadow, run 45 courses on the machine (leggers), measuring and checking each head and adjusting stitches as needed. You can, on the next stocking coming off the legger, make your adjustment on the welt beginning with the picot. Determine the number of courses required to give the desired length in the complete leg. Set the counter and start on the footer.

Take the first measure at 45 courses but remember that this is not as positive as in the leg—use it only as a gauge and from there on use the eyes and match the average leg stitch.

The foregoing method should give good results in either air conditioned rooms or from an open board, since we are working from an average standpoint and do not depend upon being able to stretch the stockings the same amount each time.

CONTRIBUTOR NO. 6994

Verge Plates

EDITOR COTTON:

On page 112 of the January 1940 issue of COTTON, your "CONTRIBUTOR NO. 6957" has asked which type of verge plate has been found most satisfactory, and also the setting of the verge plate.

At our plant we have found that the verge plates with slits in a composition facing work best.

In our opinion the sinker heads, jack heads, and verge plates should be set to a gauge, and the slur cock cams should be square; this setting will permit sinker butts to strike square on the face of the verge plate as it should. The clearance between the verge plate and the sinkers should never be more than the thickness of a divider.

The head should be adjusted so that it will not rave more clearance than this on either side of the head; by all means have some clearance to prevent excessive wear and strain on the jacks, verge plates and breakage of sinkers.

The motion of the catch bar should be adjusted so that it will not "ride" the sinker butts at any point by force or weight of the catch bar. This adjustment will stop more sinkers from breaking than any adjustment that can be made on the heads.

CONTRIBUTOR NO. 7059

Adjusting the Stitch for Half-Hose

THE FOLLOWING question developed in a discussion between knitting machine fixers concerning adjusting the stitch on circular machines to make different sizes of half-hose: One side said it is not necessary to change the links on the pattern chain but only necessary to turn in or out the screws on the main pattern drum. The other side claimed this procedure is not good sizing practice as it throws the stitch gauge out of proportion.

Upon being submitted to the editors of COTTON, the question was passed along to other mill men, one of whom replied:

"The side of fixers claiming that the stitch gauge is thrown out of proportion is exactly right. Different sizing should never be secured by using screwdrivers on the drum tension to get the size. In sizing half-hose it is better first to make some definite size. Here in our plant we always put our samples out in size 11. We set our machine and build our chain, and adjust our tension on this size to give us the fabric that we want in this particular hose. Then, when we change our size from one size to another we do this by adding chain lengths, and never by lengthening the stitches.

"For instance, if you set up a stocking on your knitting machine in size 11 and have a certain weight in the stocking, which naturally will give a certain tightness of fabric, and then changed to a size 10 by tightening the stocking, and to size 11½ or 12 by loosening the stocking, you would have just as many different fabrics in this stocking as you have sizes in this pattern. Then size 10 would be a very tight fabric, the size 11 would be the fabric you want and set up in the first place, and the size 11½ and 12 would be loose and sleazy, and of course no dependable mill would want to ship out goods in this fashion.

"The stitch or fabric in this stocking should never be changed regardless of what size you desire to make. The tension on the size drum of a knitting machine is only for keeping the size of the stocking regulated to the right point after your chain has been properly built."

Another mill man offered the following opinion: "Changing from one size to another on circular half-hose machines should be done by adding or taking out links of the main control chain. There are various reasons why this method is the most practical.

"The recognized standard of sizes in men's half-hose are 10, 10½, 11, 11½, and 12. Of course, both larger and smaller sizes than these are made but these five sizes are accepted as standard.

"Half-hose from size 10 through size 12 are made with the same length boot or leg; therefore, the only change necessary to go from one size to another is in the foot. The most practical way to make this change is by lengthening or shortening that part of the chain which controls the machine through the foot. If you desire to maintain uniformity of stitch and elasticity this is the only method that can be used.

"There is approximately two inches difference in length between a size 10 hose and a size 12. This difference is in the foot length only and any attempt to effect this change by adjustment of the fashion drum tension screws will result in an undesirable variance in the stitch and elasticity of the fabric and will cause costly mechanical trouble."

(If the readers of COTTON have other ideas on this subject they will be welcomed by the editors.)

Picot Turns Out on Full-Fashioned

EDITOR COTTON:

This is in answer to the question of "CONTRIBUTOR No. 6955" on page 174 of the October 1939 issue. It has reference to the picot turning out.

I have had some of the same trouble referred to in this question and I am still having it and have experimented in a number of different ways trying to eliminate this trouble.

I do not think that this trouble can be entirely eliminated because if it were possible to seam the stocking welt on the inside all the way to the transfer it would eliminate most of this trouble, as the seam has a tendency to draw the fabric shorter on the outside as the welt is seamed all the way on the outside, and just about half way on the inside letting the inside stretch a little longer, causing picot to have a tendency to work on the outside.

I would also recommend that the knitters in turning welt do not stretch the outer edge of the welt any more than necessary. This also would help to some extent as the welt is always longer on the selvage than it is on the center of the stocking. With the condition of not being able to seam all the way on the inside to the transfer, it will cause the picot to work itself on the outside of the welt.

CONTRIBUTOR No. 7005

Questions on Banners

EDITOR COTTON:

When changing cylinders on Banner machines, and the ones that are to be used have no needles, what is the best method of determining where the long and short butt needles should be placed? Please explain in detail.

CONTRIBUTOR No. 7053

EDITOR COTTON:

When running Banner machines, what is the best way to even the heel and toe stitch?

CONTRIBUTOR No. 7055

EDITOR COTTON:

On Banner machines, when the proper construction is used in making a stocking according to the gauge of the machine, what causes cutting in the various yarn changes and how can this trouble be overcome?

CONTRIBUTOR No. 7056

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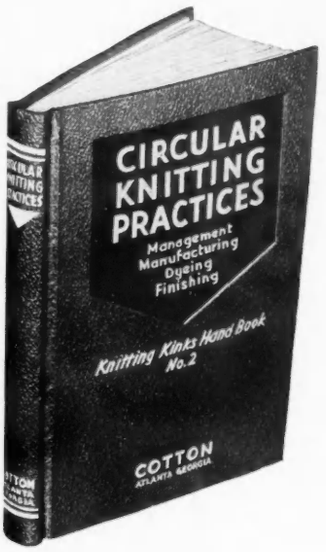

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TRENDS AND HIGHLIGHTS OF THE KNIT GOODS MARKETS

Weakening Price Structure in Silk Hosiery and Impending Introduction of Nylon Retard Spring Season. Seamless Hosiery Demand Holds Up Well —Underwear Plants Fairly Busy But Only on Old Orders. Anklet Manufacturers Active

Philadelphia, March 16, 1940

THE PRESENT year to date has seen a period of great uncertainty in all lines of knit goods with new orders conspicuous by their almost complete absence as buyers in most branches of the industry decide to work down old contracts and old stocks rather than buy new. There was great excitement in the primary markets right after the war last fall but the consensus is that these purchases have been worked down so that in the next few weeks many will have to start placing new orders with manufactures. In the meantime, silk hosiery prices have continued to weaken in both the branded and unbranded branches of the trade so that most if not all of the recent drastic drop in silk has been offset by lower goods prices.

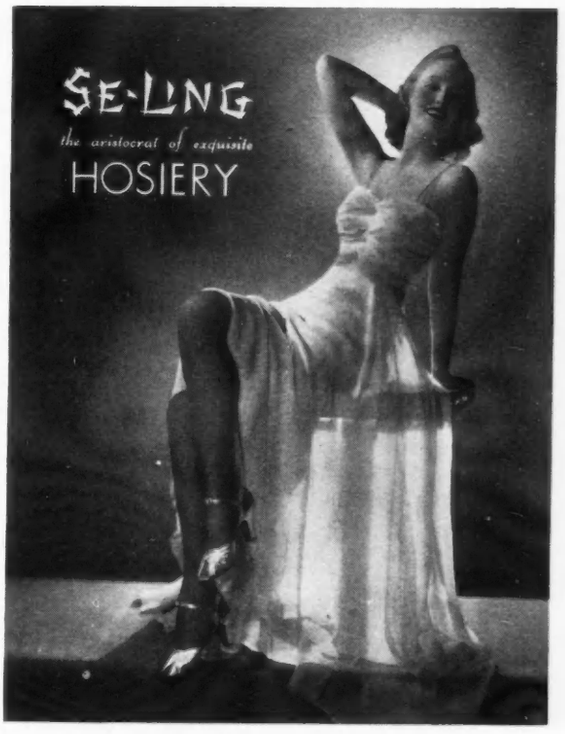
Full-Fashioned

Prices have been dropping in the full-fashioned hosiery section and demand has been very dull so far as the mills go. Curtailment has been the rule this month among Pennsylvania's mills although normally the spurt in the first half of the year should come in March, and just before Easter. This year the reverse is true with the mills being on less than half time and the slowest rate of production in many weeks. Prices of hosiery are being reduced with the sharpest cuts coming in the lower priced lines such as those with Bemberg, rayon or mercerized welts. Yet manufacturers feel that $3.00 silk will not mean the elimination of such types of hosiery; they feel that there will be a permanent place in the market for such in hosiery to retail around 59 to 69 cents or with rayon in lines to retail even higher. Branded and unbranded knitters have reduced prices and many have also brought out new numbers that fit lower retail brackets. For example, Kayser brought out new numbers that wholesale at $6.25 per dozen.

Much normal buying of silk full-fashioned hosiery this year is being delayed because of the closeness of the advent of nylon stockings on the market. Manufacturers report that many retailers refuse to place normal business this spring because of desire to sell nylon. Manufacturers have been unable to convince many buyers that nylon production will be relatively small in comparison with total silk hosiery demands and some feel this factor will remain a factor of uncertainty for all-silk lines for months to come. Buyers of hosiery are not yet at the point where they feel bottom prices are here and that forward coverage should be followed again. This means there is no indication that a turn for the better is immediately at hand.

Half-Hose

These lines have been in fair demand so far as knitters go but jobbers say that trading has not been nearly so active as in other lines such as children's items and anklets. The new lines of wool half-hose for the winter of 1940 are being opened and there has been a good response in these so that numerous knitters are already at work on the initial contracts. But trading in these has been slowed by the general uncertainty of business in the last ten weeks and more so by the new weakness in worsted yarns. It is the time of the year when wool half-hose makers place contracts for their yarn needs for the winter goods but now they are wool and yarns going lower so that they are delaying placing such orders and this may make them a little late in getting started. Shipments of half-hose and slacks for men are keeping around the



Courtesy, Peachtree Hosiery Shoppe, Atlanta.

This attractive counter-card display is used by Se-Ling in its retail sales promotion . . .

rate of the same time a year previous. Goods buyers are pushing for lower prices in view of the decline in cotton and wool.

Seamless

There has been a good demand for anklets but other seamless numbers are generally only fair with seasonal increases making their appearance in children's numbers. Anklet production is increasing compared with a year ago and in fact is one of the brightest spots in the entire hosiery market although new orders are not quite so brisk as it was a couple of months back. Anklet shipments in recent weeks have been considerably larger than in the same time a year previous. But shipments of seamless lines for women have remained steady at the level of a year previous. Silk seamless is quiet as buyers demand greater declines in price than knitters claim the silk drop warrants but others say that the drop in silk will aid the silk seamless business by bringing back some old retail brackets that were popular and which were rubbed out by the skyrocketing of that commodity. This means there will be fewer silk plaited goods than when silk was at $4.50, but rayon seamless is expected to hold its own even with lower silk especially in the chain store numbers where large amounts are moved at around 25 cents.

Underwear

Although new business has been very slow with underwear knitters they have been fairly active on old contracts. This has been true with their own supplies, most taking fair deliveries on old cotton yarn orders but refusing to place new business over recent weeks. Underwear manufacturers booked a very large volume of business late last year and they have been busy getting this merchandise out so that they were able to go through this period of general lack of new business in better shape than some other textile manufacturers. Prices of underwear have not changed materially since the fall lines were shown but knitters that had not covered are now able to buy sales cotton yarns at considerably lower prices so that knitters having their own spinning departments have lost ground in this connection to competitors who are now able to buy cotton yarns at prices many in the trade assert are under cost to reasonably efficient spinning plants.

FORECAST

Philadelphia, March 16, 1940

(Opinion submitted by COTTON's market correspondent)

The decline in business volume in this country that has been apparent since the first of the year now is leveling out and indications are that after a relatively short period of strengthening this base, better business will gradually develop unless upset by European developments. Textiles have been affected by the decline in the averages but hosiery and underwear plants have been able to do fairly well on old orders. This was indicated for instance by hosiery shipments in January that were up almost 10 per cent compared with a year previous.

Even so knit goods manufacturers have not been buying yarns and the primary markets have been dull and easy in wool, cotton and silk yarns. But signs now point to the end of this downward price movement. Silk has not changed over the month except within a narrow range, remaining close to the $3.00 level. Japan thinks this is a safe level at which to sell and keep the American consumer happy.

There is nothing in sight to cause any great price change in silk over the next few weeks and indications are American consumption will be higher than the recent small takings. In cotton the raw market has been steady but cotton yarns after a long and sharp decline give indications of a period of stability with slightly firmer markets due. A great deal of yarn is about to be bought. Bringing of old contracts down after the late 1939 buying splurge has ended and more new business has to be placed.

Wool is barely steady and much in this commodity depends on how long the war lasts. Early peace would see a weakening in wool but continuation of war means that the end of wool drop is here. Worsted yarns are now very near the end of a sustained drop from the late 1939 peak. Rayon is unchanged in price and nothing is in sight to lead us to expect any great price change in the man-made fiber.

By the time this is published business will have improved conservatively and this trend will continue but at a slow pace until summer. The latter half of the year will be the better of the two so that the year as a whole will be good unless early general peace brings a period of readjusment in world affairs which would retard American business temporarily.

Retail demand has been slightly ahead of last year and inventories that had become a little too heavy in many instances have been liquidated to a fair degree so that there is nothing to cause fear among manufacturers on this score. Yet there is nothing in sight to cause them to buy far ahead at advancing prices such as was done last September. The outlook is for satisfactory volume but less exciting business than then but much better than many enjoyed during the first two months of 1940 which was a short setback now about ended, unless new major developments take place abroad.

Introduction of Nylon Retards Silk Hose Demands

Expectations are nylon full-fashioned stockings will be on retail sale nationally May 15. Two large Philadelphia mills are now manufacturing nylon silk stockings and they have been pushing production along with other manufacturers in other parts of the country as rapidly as the du Pont company can furnish its new yarn. In addition to the two local mills a third firm in this section is manufacturing in Lebanon and doing its dyeing and finishing here. There are 33 other firms in cities throughout the country also producing the new stockings. Previously they have been on retail sale only in limited quantities in a few stores in Wilmington, Del., where they have been obtainable only by residents of that city. It is stated that modern machinery used in making silk full-fashioned hosiery can produce the nylon lines, the mechanical operation and expenditure of labor being about the same.

The two producing mills here are the Apex Hosiery Co. which has about twenty-five machines on nylon turning out about 1200 dozen pairs a week and the Gotham Silk Hosiery Co. is working ten machines on them. Nomend Hosiery, Inc., is dyeing and finishing nylon stockings at its Philadelphia plant. It has been reported the complete list of hosiery manufacturers licensed by the nylon Division of du Pont, to make nylon hosiery is as follows:

Apex Hosiery Co., Philadelphia; Archer Hosiery Mills, Columbus, Ga.; Bear Brand Hosiery Co., Chicago; Berkshire Knitting Mills, Reading, Pa.; Burlington Hosiery Associates, Greensboro, N. C.; Chipman Knitting Mills, Easton, Pa.; Claussner Hosiery Co., Paducah, Ky.; Cooper, Wells & Co., St. Joseph, Mich.; Davenport Hosiery Mills, Chattanooga, Tenn.; Dexdale Hosiery Mills, Lansdale, Pa.; Globe Knitting Mills, Grand Rapids, Mich.; Gotham Silk Hosiery Co., Dover, N. J.; Holeproof Hosiery Co., Milwaukee, Wis.; Hoover Hosiery Co., Concord, N. C.; Hugh Grey Hosiery Co., Concord, N. C.; Julius Kayser & Co., New York City; Larkwood Silk Hosiery Mills, Charlotte, N. C.; McCrary Hosiery Mills, Asheboro, N. C.; Magnet Mills, Inc., Clinton, Tenn.; Marshall Field & Co., Spray, N. C.; May Hosiery Mills, Burlington, N. C.; Mission Hosiery Mills, Los Angeles; Mock, Judson, Voehringer Co., Greensboro, N. C.; National Silk Hosiery Mills, Indianapolis, Ind.; NoMend Hosiery, Inc., Philadelphia; Nolde & Horst Co., Reading, Pa.; Oakbrook Hosiery Mills, Reading, Pa.; Phoenix Hosiery Co., Milwaukee; Propper-McCallum Hosiery Co., Northampton, Mass.; Real Silk Hosiery Mills, Indianapolis; Rollins Hosiery Mills, Des Moines, Ia.; Rosedale Knitting Co., Reading, Pa.; Vanity Fair Silk Mills, Reading, Pa.; Van Raalte Co., New York City; Wayne Knitting Mills, Fort Wayne, Ind., and Wiscassett Mills Co., Albemarle, N. C.

In an official statement the du Pont company revealed that its present production of nylon yarn is not up to the ultimate capacity of 4,000,000 pounds a year. It was made plain that only limited quantities of nylon hosiery are expected to be on sale in retail stores throughout the country about May 15. The announcement read in part: "The plant has been in operation only since December 15, present production is about 30 per cent of ultimate capacity. Because of the time necessary to install machinery and to give employes a thorough training in the manufacture of this new product it probably will be late summer before capacity production of approximately 4,000,000 pounds a

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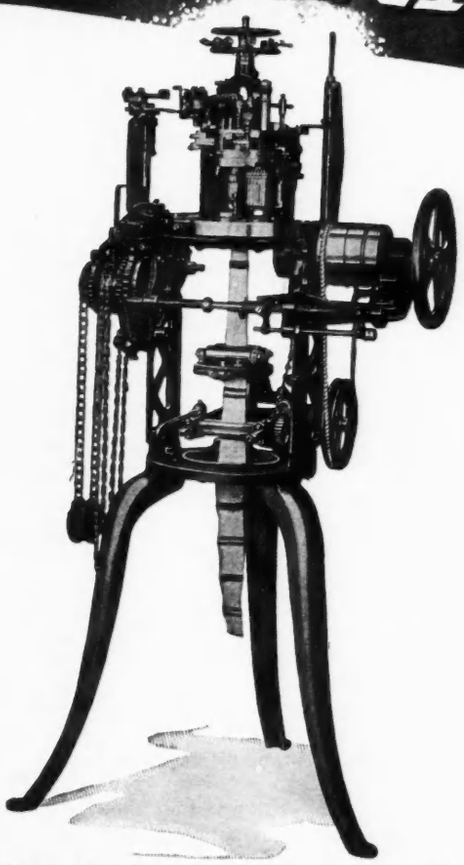

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year will be reached.

Buying of silk full-fashioned stockings has been retarded by many who are waiting for nylon stockings to come on the market. Overlooked by some are the indications that almost half of the 16,000 full-fashioned machines in this country are barred from nylon production. These are the 39 and 42-gauge machines which together constitute about 55 per cent of the present full-fashioned equipment. Nylon stockings will be permitted by du Pont to be made only on machines of 45-gauge or finer as indicated by the establishment of the minimum mill price of $8.25 on the 45-gauge. The production of 45-gauge last year was only 35 per cent of the total full-fashioned business the output of 48-gauge hosiery was about 5 per cent while the production of 51-gauge and finer was no greater than 8 per cent. The necessity will be to continue these coarser gauges in silk.

1939 Large Year for Underwear Manufacturing

The complete production figures of the underwear industry made available through the Underwear Institute, showed that last year made a record for output for the industry as a whole. This includes the divisions such as knit cotton and wool, circular knit rayon and silk, woven athletic, warp knit rayon and silk. The total production of these divisions amounted to 48,271,000 dozens which was 26 per cent ahead of 1938 and 9 per cent ahead of 1937 and 3 per cent above 1936 which was the nearest approach to 1939. The knit cotton and wool division last year was the largest making 57.6 per cent of the total. Circular knit rayon and silk came next with 20.8 per cent and woven athletic underwear meaning union suits, shorts, etc., made up 18.1 per cent of the total.

The percentage total showed the knit cotton and wool division was fairly constant for the past three years. The woven division made a considerable gain last year. The report also shows that total stocks of all kinds of knit cotton and wool underwear at the end of 1939 were 3,790,000 dozens compared with 3,079,000 dozens at the end of 1938. Orders on hand with manufacturers were given as 5,132,000 dozens at the end of the past year in the knit cotton and wool divisions comparing with 3,115,000 dozens at the end of 1938. In the woven division orders with mills were 1,584,000 dozens at the end of 1939 compared with 1,061,000 dozens at the beginning of that year. Underwear manufacturers this year to date have booked comparatively little new business but they have been fairly busy on the large volume of orders which were placed late last year. They feel that by the time this run comes to its end that buying confidence will have been restored so that they will be able to continue with an active production rate.

Modernization of Pennsylvania Mills Stressed

Hosiery mills in Pennsylvania spent $1,000,000 for new machinery and $250,000 to recondition old machines in the last year whereas during the previous five years replacements had totalled only five machines. This indication of improvement was outlined to the Hosiery Advisory Committee of the State Department of Commerce by William M. Leader, president of Branch No. 1, American Federation of Hosiery Workers. "I believe Philadelphia has put in more new machines in the last two years than any city of the country," Leader said. Three large plants, one of which spent $50,000 for new equipment in the past year and several smaller mills in Philadelphia, he said, were typical of the most modern in the country. He also stated that Philadelphia must now be listed as one of the improved hosiery centers of the country.

A report was also given to the committee that during the first year of the present administration of Governor James no Pennsylvania hosiery mill went to the South and that on the other hand two firms actually moved machinery of southern mills to Philadelphia to be operated. The advisory group accepted a suggestion of Secretary of Commerce, Richard P. Brown, that it prepare proposals for legislation changes calculated to benefit industry. Such proposals would be introduced in the 1941 Legislature. At the same time Secretary of Labor and Industry, Lewis G. Hines, challenged recent Pennsylvania strike figures used by the Federal Government and insisted the state's labor picture during 1939 was far more favorable than a recent report of the United States Department of Labor made it appear.

Cotton Underwear Under Stamp Plan

Cotton underwear both knitted and woven are included by the Department of Agriculture in its extension to cotton goods of the so-called stamp plan in the WPA and relief method used for some time in distributing food products. This announcement was made to the industry by Roy A. Cheney, president of the Underwear Institute after he had taken up the matter with the department in Washington. The cotton stamp plan he pointed out as is the case with the food stamp program will provide for the movement of surplus cotton goods entirely through the normal channels of trade. The Government does not buy or distribute the cotton goods. It will give eligible needy families new buying power in the form of special cotton order stamps and these families will then use the stamps to secure cotton goods at retail stores.

The plan, President Cheney explained, was to be inaugurated in the early part of March in three or four test cities. He warned that not much volume could be expected for the underwear industry this spring but next fall it is believed that the plan will be extended to include at least fifteen cities and counties. He feels therefore that some uplift to the sales of cotton underwear may then be expected. The plan gives eligible persons the chance to buy cotton stamps in an amount approximately equal to their present expenditures for cotton goods. Purchasers will receive $1.00 worth of free stamp for each $1.00 worth purchased. Stamps, as they are in foods, will be issued in denominations of 25 cents. Purchased stamps will be colored green and the free stamps brown. Purchases will be made every three months and rules are made as to the maximum and minimum rates according to the size of the families. Any regular retail store handling new cotton goods is eligible to take part wherever the plan is put in effect.

Cooperative Hosiery Movement Expanding

Although there was considerable doubt in the knit goods industry at the time of its organization a little more than a year ago that the cooperative hosiery manufacturing movement would survive, it has done so. An addition to the group of mills operating under the supervision of Dr. David C. Colony, a minister of a church in the Kensington textile district, has just been made with the acquisition of the Laurel Hosiery Co. of Reading, Pa. This plant will be operated as a cooperative with the 110 employes also being the owners of the business. It will operate as the Pagoda Hosiery Mills and will have 26 full-fashioned machines of 45-gauge. Dr. Colony also stated that he expects to take over another plant in Philadelphia for operation as a cooperative mill. The plant in prospect is the Superior Knitting Mills, having 36 full-fashioned machines of 42-gauge. These two additions make six plants operating as cooperatives under the Colony leadership. They are: Colony Hosiery Corp., Hulby Hosiery Co., Clover Maid, Laurel, Superior and a small plant in

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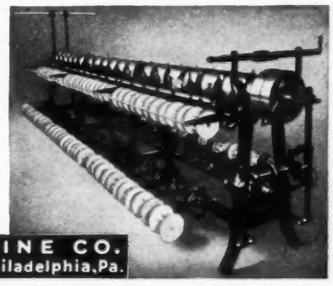

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The Colony Hosiery Corp. was started a little more than a year ago and according to a report by its officers it enjoyed a satisfactory period in 1939 with the outlook for 1940 regarded as favorable. The Colony operates 13 machines of 42-gauge and during the last year the plant was said to have operated at full time rates except in the case of one or two machines which were shut down for a day or two while waiting for silk to arrive which its member-owners feel is a better record than most Pennsylvania hosiery plants can claim. In addition to giving its owners steady employment at the end of 1939 it was able to show a considerable reduction in its debts. Its outstanding obligations have been reduced from about $35,000 to about $13,000 which is due the RFC.

Hosiery Exports Gained Last Year

Total exports of all kinds of hosiery in 1939 were 1,308,931 dozens valued at $4,394,566. Neither the full-fashioned nor seamless branch experienced any decrease in exports as a consequence of the economic trade restrictions after the outbreak of the European war. The average monthly exports of full-fashioned as well as seamless hosiery for the four months of September through last December were somewhat larger than the average for the first eight months of the year. Losses with some countries in other words were more than made up by gains with others. Losses principally in women's full-fashioned hosiery were noted with the United Kingdom and the Union of South Africa after the war but were compensated by gains in the same hosiery with Panama, Mexico, the Netherlands, Sweden and Switzerland. Exports of seamless hosiery in recent months decreased materially to the Philippine Islands while exports to Panama, Costa Rico, Salvador, Mexico and most of the South American countries such as Colombia and Venezuela increased materially. Of the total exports, women's full-fashioned hosiery accounted for 418,306 dozens while seamless hosiery made up 890,625 dozens representing a gain of 241,000 dozens over 1938.

Cooperative Hosiery Mill in Clash with Union

After having been placed on the American Federation of Hosiery Workers' unfair list, the Hancock Hosiery Mill, Philadelphia, said to be the world's largest cooperative mill, reached a one-year agreement. The difficulty arose when this cooperative, which has no connection with the Colony group of cooperative mills, sought to reduce wages. The Hancock using 18 and 20-section type machines formerly operated by the Interstate Hosiery Co. has been running several months as a cooperative. The management claimed that it had to have a lower wage schedule to secure a certain order but the American Federation of Hosiery Workers turned down this request. They claimed that if they made an exception in the case of this cooperative and granted lower wage rates this would have a weakening effect on wage rates in other sections of the industry. The matter was adjusted with the large cooperatives signing a one year contract in which they agreed to pay the full union schedule of wages and at the same time it was announced that the order in question would be accepted. How this has been worked out so that both could be done was not announced.

Per Capita Hosiery Consumption New Record

Per capita consumption of hosiery rose to 12.5 pairs in 1939 to establish a new record on the basis of a previously reported consumption of 136,741,480 dozen pairs according to a bulletin of the National Association of Hosiery Manufacturers. As to the immediate future the bulletin said: "The continued rise of the purchasing power of the nation as expressed by increases in United States industrial pay rolls gives reason to believe that any business reaction which may lie in the immediate months ahead should have no serious effect upon the hosiery industry". Employment last year moved to a new high also, the total being 157,660 compared with 144,708 in 1938. The full-fashioned branch increased its personnel to 92,523 compared with 84,619 and the seamless division to 65,137 compared with 60,089.

Cheaper Silk Brings Lower Hosiery Prices

Practically all manufacturers of women's full-fashioned hosiery have reduced their prices in recent weeks, bringing these more in line with the current lower level of raw silk. At the present time there are reports in the market that manufacturers of branded full-fashioned will shortly announce price revisions equaling the drops that have already occurred in unbranded lines. Earlier Julius Kayser & Co., announcing that its list would be unchanged to April 30, stated that it was adding two cheaper all silk hosiery numbers at $6.25 a dozen for delivery beginning March 20. The new silk styles for the lower retail bracket of 85 cents a pair will consist of a three-thread and a four-thread with plaited feet. Previously its lisle top numbers were reduced from $6.35 to $5.95 to fit into the 79 cent retail range.

Berkshire Knitting Mills within recent weeks announced new prices which showed reductions throughout its list amounting to as much as 30 cents a dozen on volume selling numbers such as three and four-thread. The new basis on these styles in 42-gauge was $5.85 a dozen compared with $6.15 on the previous list figured at the end of December. Another four-thread, 42-gauge number of high twist with plaited foot and heel and stretch welt is priced at $5.85 against $6.15. Late in February price reductions of 60 to 90 cents a dozen in their line of full-fashioned stockings including silk numbers retailing at $1, $1.15 and $1.25 as well as lisle top stockings retailing at 89 cents were announced by the Holeproof Hosiery Co. At the same time Phoenix Hosiery Co. reduced the price on its three-thread and four-thread silk and lisle top full-fashioned introduced at the beginning of this year, from $6.60 to $6.00 per dozen.

This made their new retail price 79 cents instead of the former 89 cents beginning March 6. Prices on the Phoenix all-silk constructions were not altered at that time, these styles continuing to start at $1.00 at retail. Gotham Silk Hosiery Co. declared it was continuing to quote $6.00 per dozen for its three-thread, four-thread and six-thread lisle top numbers. During the last few weeks unbranded full-fashioned has been declining in price also with official revisions averaging 25 cents a dozen but with somewhat deeper cuts being made where mills have found certain numbers becoming too heavily stocked. Lower prices for hosiery and the fear of additional cuts have caused the pre-Easter business to be smaller than normal with most manufacturers. Mills in the Philadelphia area this month have been averaging less than half-time operations although normally March should be one of their active months. Not much change is expected until after additional price changes are announced, according to goods buyers.

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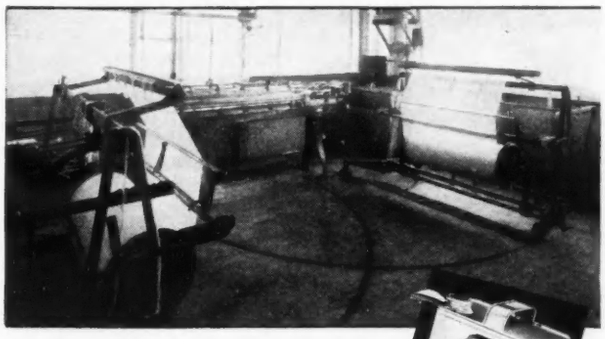

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TRENDS—YARN MARKETS

Prices of Cotton, Silk and Wool Leveling Out After Drastic Decline—Cheaper Prices Attracting Forward Buying Again But Not at Late 1939 Excited Pace—Silk Showing Stability Around $3.00—Rayon Less Active

Philadelphia, March 16, 1940

THERE ARE signs that after two and a half months of quiet new business in the yarn markets that lower prices are going to attract buyers. This trend is especially apparent in cotton yarns where buying into the middle of the year has been done, the first in several months or since the post-war buying died down. Manufacturers have since been using deliveries of these late 1939 orders and at the same time refusing to place new. The manufacturing end is also finding demand for many lines of goods larger as they are able to pass on the lower costs of wool, cotton and silk to the consumer and it is apparent also that inter-fiber competition will be different than, for example, when silk was above $4.50 compared with less than $3.00 in recent weeks. Lower wool will also cause more of this fiber to go into knit goods.

Cotton Yarns

Cotton yarn prices have been trending downward as has been true during most of the year to date and as usual during such changes in the market buying interest has been very small. Sales yarn spinners are now complaining that the persistent decline in prices has now brought the general level to cost or less so that many spinners have reached the point where they are refusing to take contracts for delivery far into the future. Most of them are confining new business to nearby delivery dates feeling that they should only take enough business at these levels to keep them running. In addition to the somewhat easy tone in the raw cotton market yarns have been affected by low price sales which represented either commission cutting or short selling. As an example of the decline in prices over the last month, which has been most severe in two-ply, spinners a month ago quoted 20s two-ply at 27½ cents which would compare with the same yarn recently offered as low as 24 cents. The decline has been less severe in single knitting cones which are only off ½ to 1 cent over the month.

New business has been small even when such extremely low prices have been quoted and instead of developing new demand they have resulted in a further weakening of confidence among buyers. There is a large volume of business in yarns waiting to be placed as soon as manufacturers feel confident that a bottom has been struck but they do not have this feeling as yet even though spinners assert that they are already selling at cost or less. Combed yarn spinners have offered 30s single combed as low as 32 cents which would compare with a low for 1939 around 29½ cents so that with the higher price of cotton and especially for the longer staples spinners say that they were operating more profitably at the low point of 1939 than they are at present.

On February 28 mercerizers made an important change in their price list, reducing them as much as five cents. This reduction at the time was more severe than reductions in combed yarn up to that time justified but processors took this step as a means of developing new business but they also considered it probable that combed yarn prices would have to come down. This has actually occurred in the meantime although mercerizers state that even further cuts will have to be made in them before mercerizers again have fair margins of profit. The reduction in mercerized did not develop new business of importance and although shipments on old contracts are proceeding at a fairly good rate these are considerably smaller than they were as late as last January. Demand for mercerized is good so far as old contracts go from the underwear trade and also from such hosiery lines as knitters of anklets.

Silk

After its earlier severe drop silk has been steady over the last month at this lower level. Indications are that Japan feels that around $3.00 would be a satisfactory level for this commodity if a large demand from the United States is to be cultivated. There is evidence of a belief that at about this price there would be less substitution of silk by the hosiery industry which had begun to use rayon and mercerized yarns in considerable volume when silk was selling at $4.00 and above. At the present time silk is selling for slightly less than $3.00 which would compare with a 1939 peak of $4.65 reached last December but it also compares with a low of around $1.50 a couple of years back. The lower price of silk has been causing marked reductions in the prices of full-fashioned silk hosiery so that in the unbranded division of the market knitters claim that they are now selling on the current level of silk.

Mill takings of raw silk in the United States during February hit a low level of 22,485 bales while consumption in January amounted to 29,506 bales and to 33,219 bales in February 1939. The lowest monthly import figures since 1910 or 13,566 bales in February resulted in a corresponding reduction of supplies in New York. Arrivals of raw silk so far this month are moving at a slightly larger rate than the record low level achieved in February. Arrivals during the first fifteen days in March totaled 8,965 bales and according to dealers arrivals this month will probably cover the requirements in this country. Consumption estimates for March range between 23,000 and 25,000 bales.

Rayon

Although shipments of rayon yarn continue at a fairly active rate request for deferment of deliveries and requests by mills for descriptions other than those ordered are taken by some in the trade as indications the market is starting to feel the current dullness in the fabric and other markets. Notwithstanding this indications are that curtailment in rayon yarn production will be relatively short and it will be less severe than in other yarns. It has been estimated that deliveries to manufacturers during February were about 5 per cent smaller than the previous month. Producers are taking advantage of the lull in new business to build their stocks up to a more normal level, it being recalled that at the end of the year their holdings were only about one week's shipments. Stocks of yarn held by domestic yarn producers at the end of February totaled 8,300,000 pounds comparing with 7,000,000 pounds at the end of the previous month. Prices are unchanged and there is nothing in sight upon which to base a nearby price reduction although a continuation of poor demand might bring this about.

Worsted Yarn

Influenced by a weak price situation in wool and a poor demand, worsted yarn prices have continued their decline during the last month. Yarn prices are off five to ten cents and some of the leading counts such as 2-20s are now selling at 35 cents a pound under the peak of late last year and only about ten cents higher than just before the war abroad began. These prices have not yet proved to be attractive to outerwear manufacturers nor to makers of wool half-hose. Buyers have watched prices decline persistently and they do not want to place new business until they are sure that the following week will not see still lower prices quoted. Manufacturers of wool half-hose should be starting on their 1940 lines at present but this is being delayed while manufacturers and goods buyers wait for some degree of stability to appear in the price situation.

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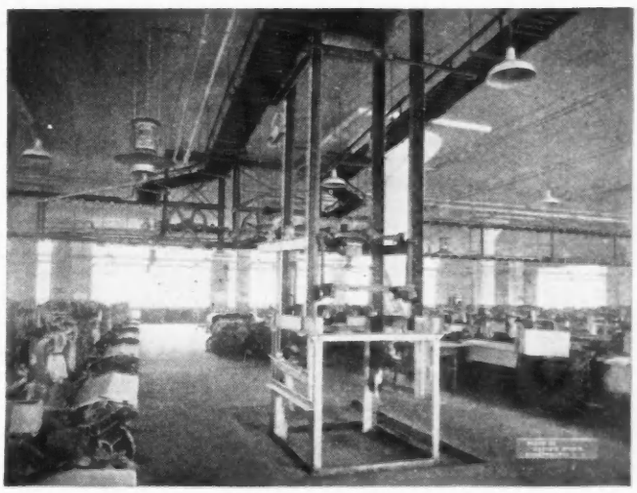

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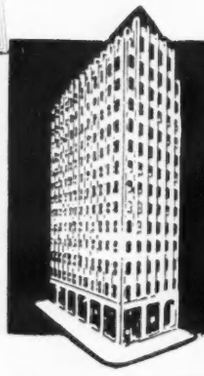

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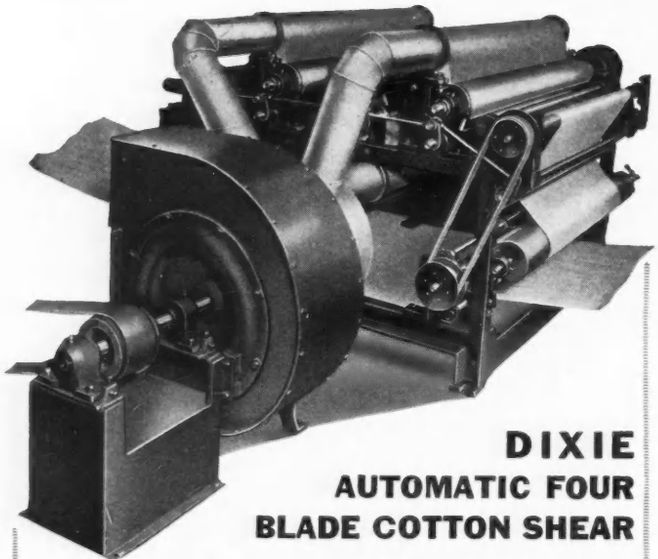

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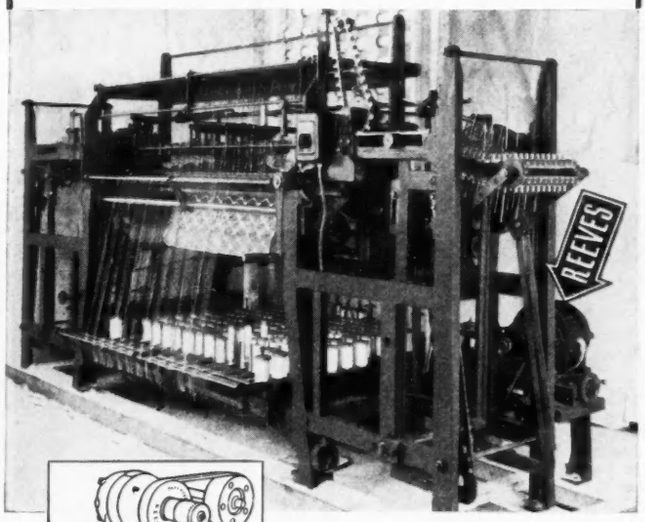

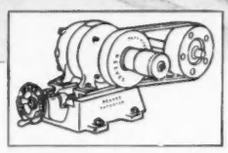

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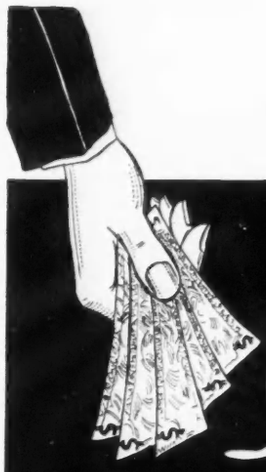

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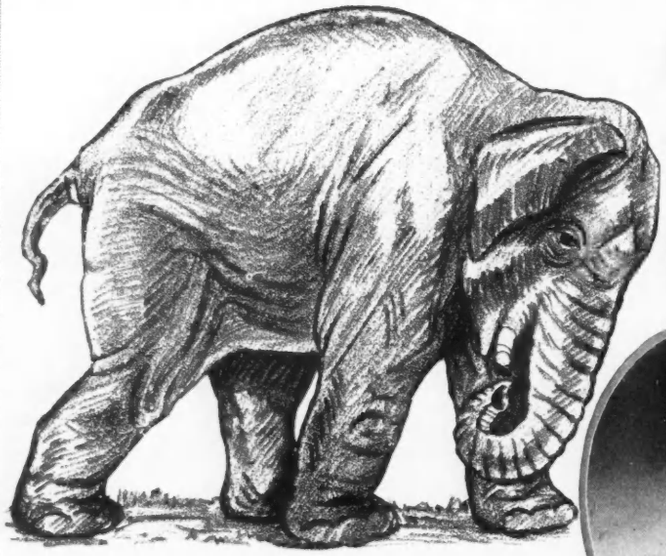
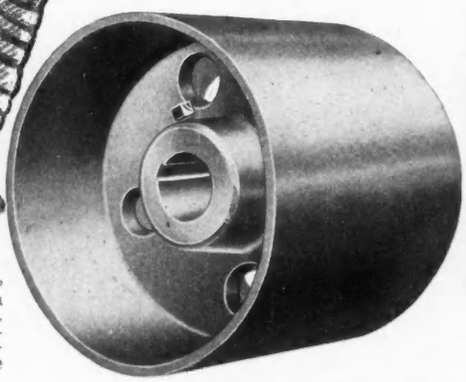


GOLDENS' WEB CENTER Cast Iron Motor Pulleys



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THE greater strength and simplicity you see in every line of GOLDENS' Web Center Cast Iron Pulleys means a longer trouble-proof life under severe conditions of service. They are the result of over 50 years' manufacturing experience and are ideally suited for motors, saw mandrels, tighteners and other high-speed, heavy-duty appliances. They are classified as follows:

STANDARD—bored, keyseated or set-screwed and *turned all over*, thus securing the best possible balance.

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GOLDENS' have furnished more complete and partial pulley and shafting equipment to cotton mills than any other manufacturer in the United States. Write today for prices.

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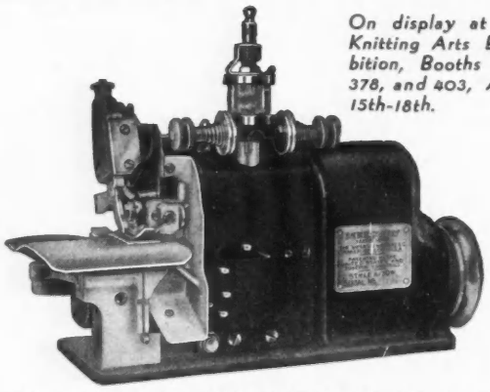
For Overseaming and Overedging with maximum efficiency at high speed and low operating cost modernize with the new

MERROW CLASS A MACHINES



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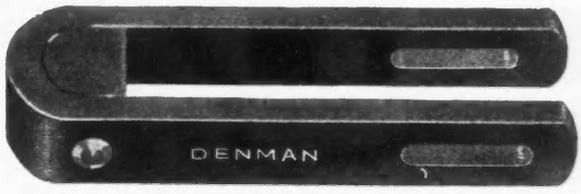
DENMAN FABRIC PICKERS . . . made to strict mill specifications . . . have proven their ability to give longer life at lower cost than any other picker—regardless of price.

DENMAN HOLD-UPS perform their work at extremely low cost because they are uniform in shape, composition and hardness.



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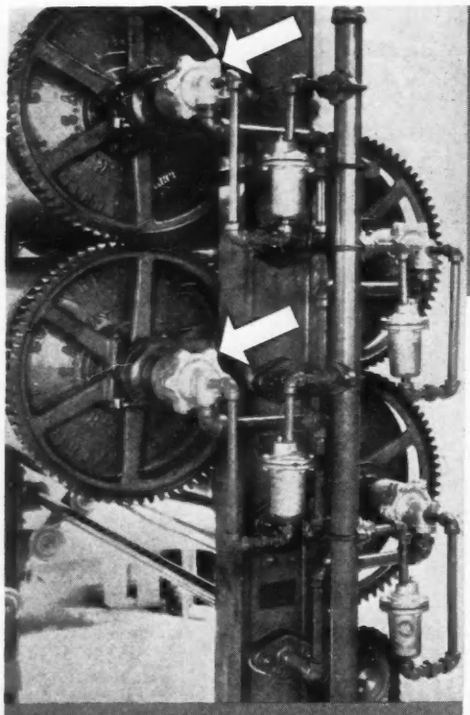

● Photo of Johnson joints furnished on dry cans made by Textile Finishing Machinery Co. This flexible piping arrangement allows the joint to locate and seat itself properly and to take up any wear.

the BEST WAY
—to get steam IN —to get condensate OUT

THE Johnson Rotary Pressure Joint is, of course, a much better joint for admitting steam into rotating rolls than the old type of stuffing box. It is completely packless, self-oiling, self-adjusting and self-aligning—cuts joint service and maintenance to the bone.

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Prominent manufacturers of textile machinery have standardized on the Johnson Pressure Joint. So the next new dry can, slasher, calender or sanforizer you buy will probably bring you the advantages of the Johnson Rotary Pressure Joint. But there is no need to wait. The savings in maintenance cost alone will quickly pay the moderate cost of change over.

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EIGHTEEN YEARS EXPERIENCE

in leading mills of South, New England and Atlantic states. Retained as consultant re sizing by several important textile mills and yarn manufacturers. Have studied chemical and mechanical problems of sizing since rayon was invented. ADDRESS—

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why Victor can help you get the best results in spinning that NEW yarn

When you change over to a new yarn, and need a new traveler, remember that one of the 14,000 sizes and styles made by Victor will give the best performance possible.

No matter how unusual the requirements, Victor has never been stumped in providing the right traveler for the job.

When something new comes up, ask the Victor man first. There's one near you. Write, wire, or telephone.

Victor Ring Traveler Company

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WILLIAM R. NOONE & COMPANY

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ARNOLD T. MALONE, Treasurer

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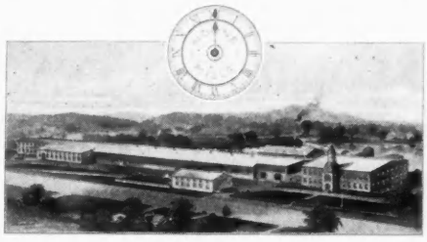
Boston, Massachusetts



Established 1831

Noone's Standard Slasher Cloths

Ask for NOONE'S SLASHER CLOTHS by name or style number.

Long experience in manufacturing Slasher Cloths and continuous experimenting have enabled us to produce several types of Slasher Cloth, each especially constructed to give best results on the particular kind of yarn to be sized.

The proper Slasher Cloth for each type of yarn means properly sized warps, less loom stops, easier weaving, more and better production, *and lower cost.* We can supply you the right cloth for your particular work.

On request, we will have our representative call and discuss Slasher Cloths with you. Try our Style No. 939 built for service and production.

We are the oldest manufacturers of Slasher Cloth in America. Our experience enables us to build a Slasher Cloth that will meet your most particular demand. Use NOONE'S SLASHER CLOTHS and be convinced.

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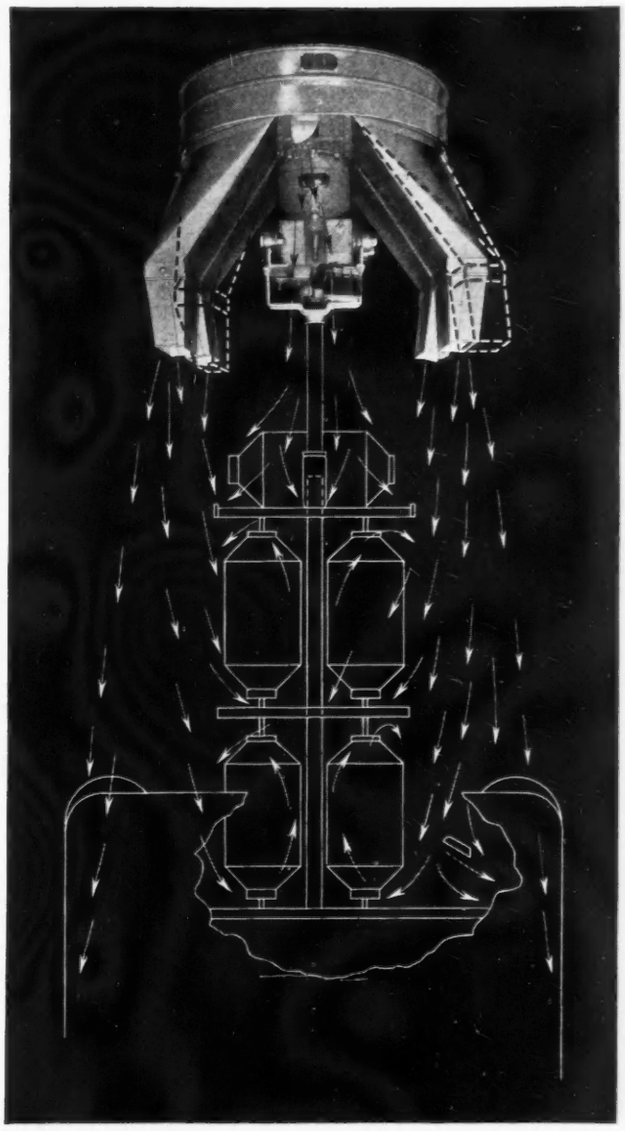
The Joseph Noone's Sons Company
Peterborough - - - - - - New Hampshire

Use Noone's Roller Cloths, Noone's Slasher Cloths, Noone's Clearer Cloths.



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On all new Parks Automatic Traveling Cleaners air outlets are adjustable.

The volume of air is adjustable. Where it is delivered is also adjustable. Both air streams may be "spotted"—inward—directly downward—or outward. One side may be spotted independently of the other and in a different direction.

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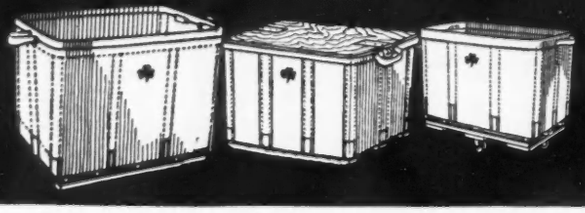

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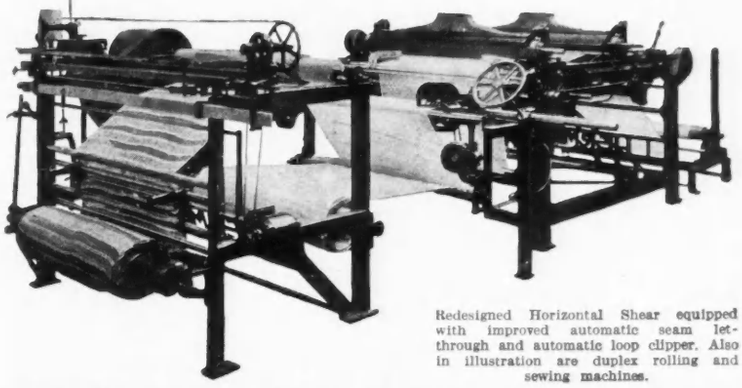

Redesigned Horizontal Shear equipped with improved automatic seam let-through and automatic loop clipper. Also in illustration are duplex rolling and sewing machines.

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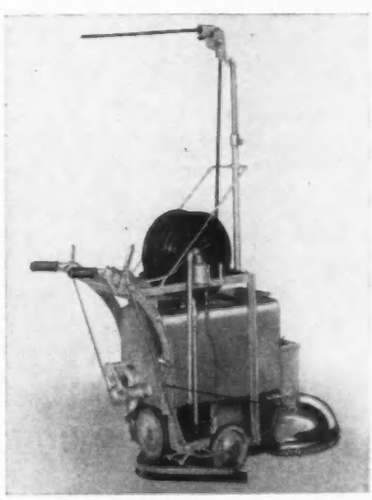

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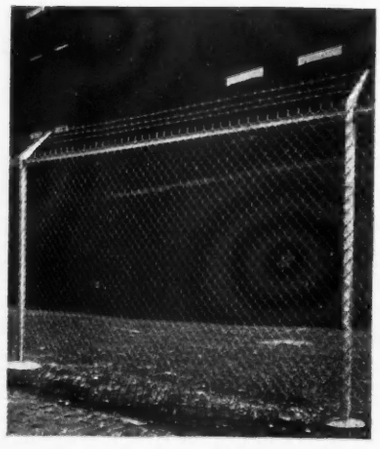

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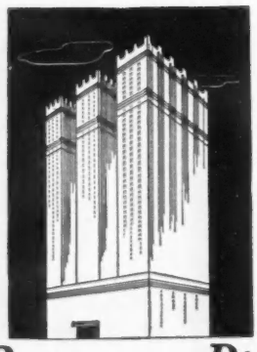

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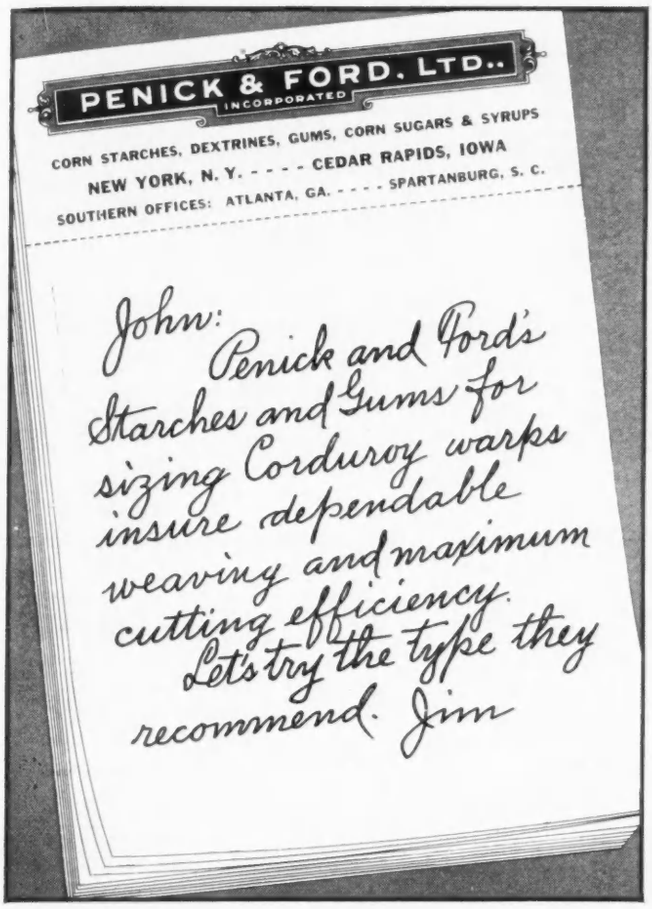
BROADWAY at 34th ST., NEW YORK

Under KNOTT Management John J. Woelfle, Manager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NEW YORK, N. Y. - - - - CEDAR RAPIDS, IOWA
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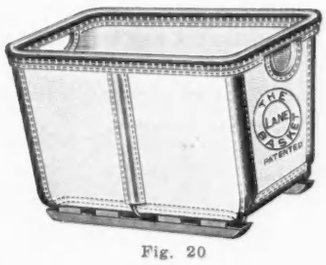

Fig. 20

LANE **BASKETS**
TRUCKS
SHIPPING HAMPERS

for

Cotton Mills, Woolen Mills,
Silk Mills, Hosiery Mills

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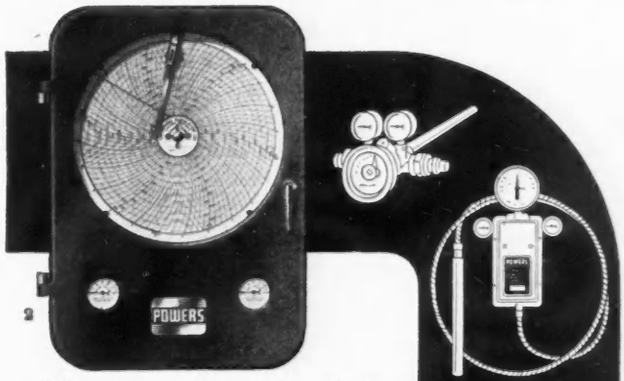
W. T. LANE & BROS., Inc.
Manufacturers **Poughkeepsie, N. Y.**



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THE first edition of "Finishing Materials" was so well accepted and appreciated throughout the finishing industry, that it was necessary to produce a second edition—which is just off the press. In this new edition, a number of subsequent articles by the author, J. Andrew Clark, were added to the original book; thus broadening its scope and making it even more useful to Finishers.

All of the material—both original and new—provides a source of unique information and experience to the operating executive. It is fresh, up-to-date and most practical for use in everyday plant operation. In general, the book now covers those basic raw materials used in the finishing processes for cotton piece goods and newly added chapters dealing with the most recent developments in permanent finishes, bleaching, mercerization, laboratory work, etc. In addition, it includes newer materials and practices not found in standard text books.

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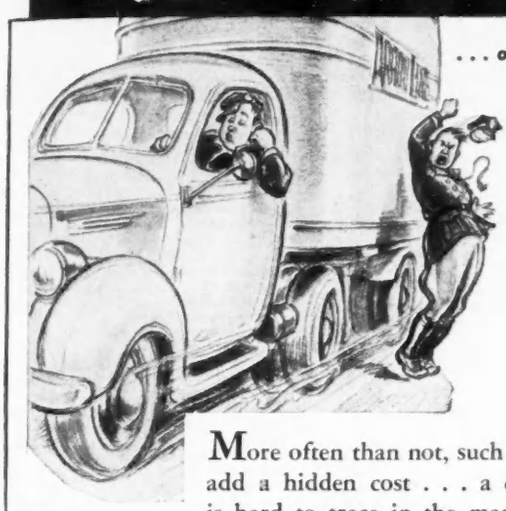

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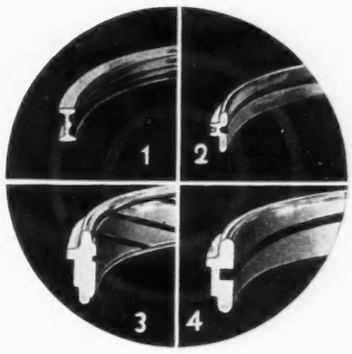

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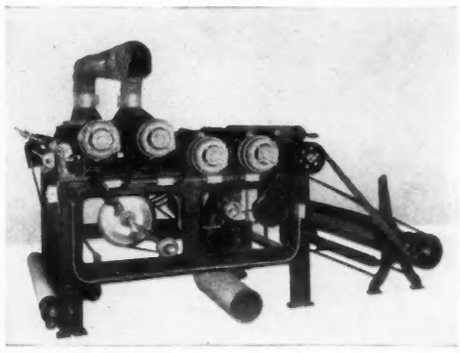

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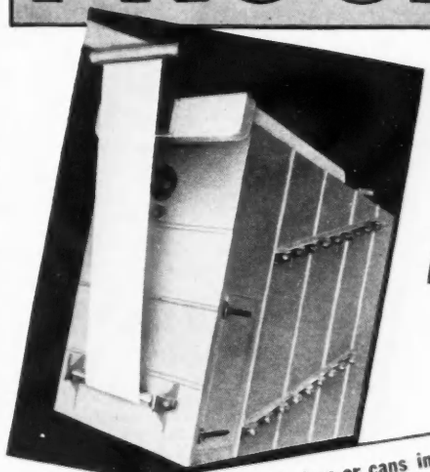

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ADVERTISER'S INDEX

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A

Abington Textile Machinery Works 175
Albany Felt Co. ..... *
Aldrich Machine Works 24
Allis-Chalmers Mfg. Co. 21
Aluminum Co. of America ..... *
American Aniline Products, Inc. .....Inside Back Cover
American Cyanamid & Chem. Corp. 31
American Magnesium Corp. .. 4
American Moistening Co. ..... *
American Monorail Co. 62
American Yarn & Processing Co. 149
Arkansas Company, Inc. 18
Arguto Oilless Bearing Co. ... 38
Armour & Co. ..... *
Armstrong Cork Co. 107
Arnold-Hoffman & Co., Inc. .. *
Ashworth Bros., Inc. 34
Associated Business Papers Inc. ..... *
Atlanta Envelope Co. 189
Atwood Machine Co. 167
Audit Bureau of Circulations. *

B

Barber-Colman Co. 123
Barkley Machine Works ..... *
Benjamin Elec. Mfg. Co. 120
Best Universal Lock Co. ..... *
Bond Co., Chas. ..... *
Borne, Scrymser Co. 33
Boston Woven Hose & Rubber Co. .....114 and 115
Boyle Co., Inc., A. S. 175
Brinton Co., H. 171
Bristol Company 35
Brown Instrument Co. 44
Bunting Brass & Bronze Co... *
Butterworth & Sons Co., H. W. 51

C

Cameron Machine Co. ..... *
Champion Paper & Fibre Co...121
Ciba Company 66
Classified Ads 190
Cleveland Tramrail Division ..118
Clinton Co. ..... *
Cocker Machine & Foundry Co.186
Cole Mfg. Co., R. D. 187
Colgate-Palmolive-Peet Co. ... 10
Commercial Factors Corp ..... *
Corn Products Sales Co. 135
Curtis & Marble Machine Co..191

D

Darnell Corp., Ltd. 137
Dayton Rubber Mfg. Co. 46
Dary Ring Traveler Co. 186
Detergent Products Corp. 177
Detex Watchclock Corp. 173
Diamond Alkali Co. 68
Dommerich & Co., L. F. 16
Draper Corporation 1
Dronsfield Bros., Ltd. ..... *
Du Pont de Nemours & Co., Inc., Dyestuffs Division ... 8
Du Pont de Nemours & Co., Inc., E. I., Fine Chemicals Division 56
Du Pont de Nemours & Co., Inc., Finishes Division 47
Du Pont de Nemours & Co., Inc., E. I., R. & H. Chemicals Dept. 22

E

Eaton, Paul B. 190

F

Fafnir Bearing Co. ..... *
Fidelity Machine Co. 173
Finnell System, Inc. 52
Foster Machine Co. 32
Franklin Process Co. 17

G

Gaston County Dyeing Machine Co. .....36 and 37
Gastonia Brush Co. ..... *
Gastonia Roller Flyer & Spindle Co. ..... *
Gates Rubber Co. 7
Gaylord Container Corp. 117
General Coal Co. ..... *
General Dyestuffs Corp. 61
General Electric Co., Lamps.. 6
Georgia Power Company 48
Gill Leather Company 133
Goldens Foundry & Mch. Co...180
Goodyear Tire & Rubber Co... *
Grinnell Co., Inc. 45
Gulf Oil Corporation 28

H

H & B American Machine Co.. 14
Hart Products Corp. 13
Henderson Foundry & Mch. Works 50
Hercules Powder Co., Inc. ... *
Hermas Machine Co. 185
Hetherington & Sons, Inc., John ..... *
Hotel Atlanta Biltmore 188
Hotels Kirkeby 188
Hotel McAlpin 188
Hotel Vanderbilt 188
Houghton & Co., E. F. 133
Howard Bros. Mfg. Co. 40
Hunter Machine Co., James .. 20
Hyatt Bearings Division 55
Hygrade-Sylvania Corp. 54

I

International Nickel Co., Inc.. .....Inside Front Cover

J

Johnson Bronze Co...Front Cover
Johnson Corporation 182

K

Kali Mfg. Co. 182
Kaumagraph Co. 43
Keever Starch Co. 181

L

Lane & Bros., Inc., W. T.....189
Laurel Soap Mfg. Co. 175
Lawlor Co., S. C. 185
Link Belt Company ..... *
Loper Co., Ralph E. 182
Lunkenheimer Co. ..... *

M

Manhattan Rubber Mfg. Co. Division 109
Maple Flooring Manufacturers Asso. ..... *
Marquette Metal Products Co.. 41
Mathieson Alkali Works, Inc.. 27
Meese, Inc. 184
Merrow Machine Co. 180
Morton Machine Works ..... *

N

National Oil Products Co. ...137
National Ring Traveler Co. ..184
National Starch Products, Inc. *
New York & New Jersey Lubricant Co. 135
Noone & Son Co., Wm. R. ...183
North, Inc., Frank G. 179

O

Old Dominion Box Co. 173

P

Pabst Sales Company ..... *
Page Fence Association 128
Parks-Cramer Co. 183
Parks & Woolson Mch. Co. ...178
Pawtucket Spinning Ring Co.. 9
Penick & Ford, Ltd., Inc. ...189
Pennsylvania Salt Mfg. Co. ..138
Perkins & Sons, Inc., B. F. ...141
Pittsburg Corning Corp. ..... *
Powers Regulator Co. 189
Proctor & Schwartz, Inc. .....159 and 191
Protective Life Insurance Co...178
Pure Oil Co. 192

R

Reeves Pulley Co. 179
Republic Rubber Division ... *
Republic Steel Corp. ..... *
Rhoads & Sons, J. E. ..... *
Robert & Company 29
Robbins Flooring Co. 186
Rochester Eng'g & Centrifugal Corp. 173
Rockwood Mfg. Co. 23
Rohm & Haas Co. ..... *
Royce Chemical Co. ..... *

S

Saco-Lowell Shops .....9 and 57
Scholler Bros., Inc. 171
Scott & Williams, Inc. 142
Selig Company 185
Seydel Woolley & Co. 178
Shell Oil Co., Inc. 42
Showalter Printing Co., A. J...184
Sirrine & Co., J. E. 186
S. K. F. Industries, Inc. 59
Snap-On Tools Corp. ..... *
Socony-Vacuum Oil Co., Inc... *
Solvay Sales Corp. 191
Sonoco Products Co. 124
Staley Mfg. Co., A. E. ..... *
Standard Conveyor Co. 177
Standard-Coosa-Thatcher Co...160
Standard Oil Co., Inc., of Kentucky ..... *
Standard Pressed Steel Co. .. 12
Standard Silicate Division ... 68
Steel Heddle Mfg. Co. ..... *
Stein, Hall & Co., Inc. 39
Stewart Iron Works Co., Inc...186
Stodghill & Co., Inc. 127
Sturtevant Co., B. F. 49

T

Taylor Instrument Companies. .....110 and 111
Tennessee Eastman Corp. 53
Terrell Machine Co. 181
Texas Co. 2
Textile Finishing Machinery Co. ..... *
Textile Machine Works ....146 and 147
Three-In-One Oil 175
Tide-Water Associated Oil Co..113
Torrington Co. .....151 and 152
Trust Company of Georgia ..105
Tubize-Chatillon Corp. 15

U

Union Special Machine Co. ....162 and 163
Universal Winding Co. 11
U S Bobbin & Shuttle Co. ...187
U. S. Ring Traveler Co. 26
U. S. Testing Co., Inc. 128

V

Vacuum Cup Metal Pulley Co..184
Veeder-Root, Inc. ....Back Cover
Victoria Paper Mills Co. 180
Victor Ring Traveler Co. 182

W

Wallerstein Co., Inc. 184
Want Ads 190
Warner Chemical Co. 3
Westinghouse Electric & Mfg. Co. (Motors) 65
Westinghouse Electric & Mfg. Co. (Loom Switches) 64
Westinghouse Electric & Mfg. Co. (Water Coolers) 19
West Point Foundry & Mch. Co. 30
Whitin Machine Works 5
Whitinsville Spinning Ring Co.191
Wildman Mfg. Co....154 and 155
Willcox & Gibbs Sewing Mch. Co. ..... *
Wolf & Co., Jacques 25

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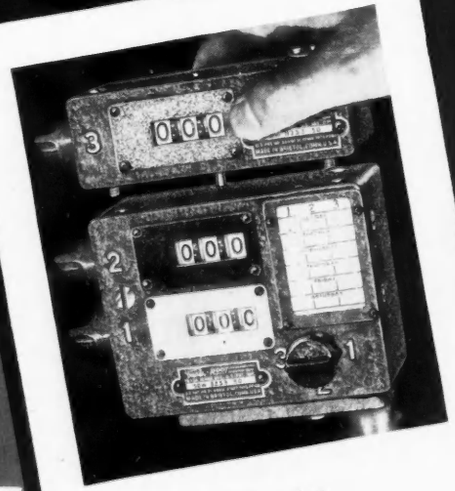

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